SYLVANIA

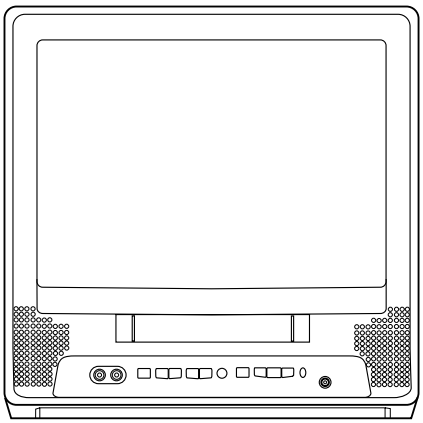
SERVICE MANUAL

Sec. 1: Main Section
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's
- Exploded views
- Parts List

Sec. 2: Deck Mechanism Section
- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism
- Alignment Procedures of Mechanism
- Deck Exploded Views
- Deck Parts List

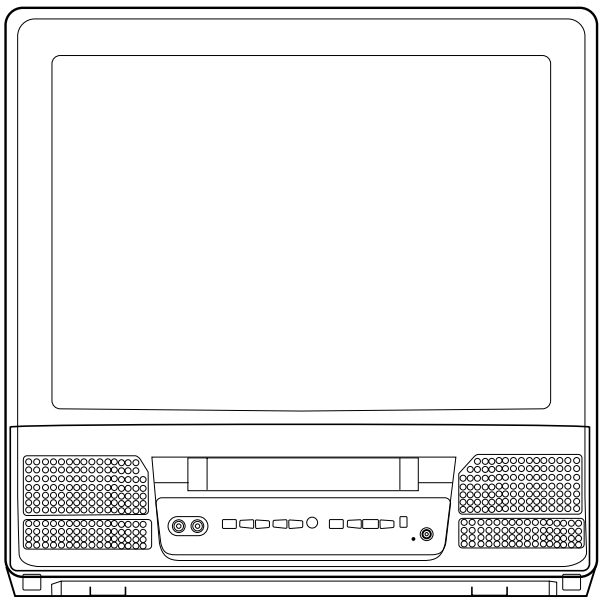
13" COLOR TV/VCR COMBINATION

SRC2213W



19" COLOR TV/VCR COMBINATION

SRC2419



VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

MAIN SECTION

13"/19" COLOR TV/VCR COMBINATION

SRC2213W/SRC2419

Sec. 1: Main Section

- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded Views**
- **Parts List**

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SPECIFICATIONS

✳Mode---------SP mode unless otherwise specified
✳Test input terminal
<Except Tuner>----------Video input (1Vp-p)
Audio input (-10dB)
<Tuner>----------Ant. input (80dBμV) Video: 87.5%
Audio: 25kHz dev (1kHz Sin)

<DEFLECTION>

[SRC2213W]

Description	Condition	Unit	Nominal	Limit
1. Over Scan	—	%	90	±5
2. Linearity	Horizontal	%	—	15
	Vertical	%	—	10
3. High Voltage	—	kV	22	—

[SRC2419]

Description	Condition	Unit	Nominal	Limit
1. Over Scan	—	%	90	—
2. Linearity	Horizontal	%	—	15
	Vertical	%	—	10
3. High Voltage	—	kV	25	—

<VIDEO & CHROMA>

[SRC2213W]

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	m/m	—	0.3
	Corner	m/m	—	1.5
	Side	m/m	—	1.2
2. Tint Control Range	—	deg	±30	—
3. Contrast Control Range	—	dB	12	8
4. Brightness	APL 100%	ft-L	55	40
5. Color Temperature	—	K	9200	—

[SRC2419]

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	m/m	—	0.4
	Corner	m/m	—	2.1
	Side	m/m	—	1.4
2. Tint Control Range	—	deg	±30	—
3. Contrast Control Range	—	dB	6	—
4. Brightness	APL 100%	ft-L	35	24
5. Color Temperature	—	K	9200	—

<VCR>

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution	(R/P)	Line	230	200
2. Jitter (Low)	(R/P)	μS	0.05	0.2
3. S/N Chroma AM(SP)	(R/P)	dB	38	33
PM(SP)	(R/P)	dB	36	33
4. Wow & Flutter (RMS)	(R/P)	%	0.25	0.5

<TUNER>

Description	Condition	Unit	Nominal	Limit
1. Video S/N	—	dB	45	40
2. Audio S/N (W/LPF)	—	dB	43	40

<AUDIO>

All items are measured across 8Ω resistor at speaker output terminal.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power (Max.)	(R/P)	W	1.0	0.8
2. Audio S/N (W/LPF)	(R/P)	dB	40	36
3. Audio Distortion (W/LPF)	(R/P)	%	3.0	5.0
4. Audio Freq. Response	200Hz (R/P)	dB	-2.0	-2.0±5.0
(-10dB Ref. 1KHz)	8kHz (R/P)	dB	0	0±6.0

Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specifications.

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for TV Circuit

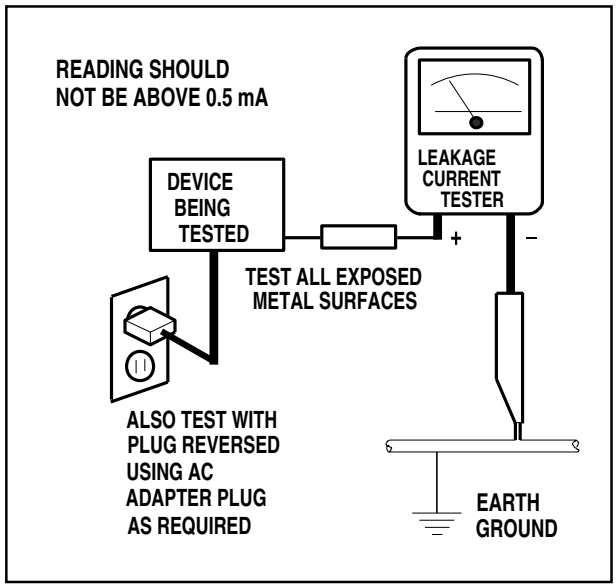
1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:

a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

c. Antenna Cold Check - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

d. Leakage Current Hot Check - With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

e. X-Radiation and High Voltage Limits - Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servic-

ing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.
3. **Design Alteration Warning -** Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.
4. **Picture Tube Implosion Protection Warning -** The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.
5. **Hot Chassis Warning -**

a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and maybe safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.

c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.
7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.
8. **Product Safety Notice -** Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc.. Parts that have special safety characteristics are identified by a (⚠) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the (⚠) symbol are critical for safety.

Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.

Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulators for transistors.

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector

When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.

Replacement procedure

1) Remove the old connector by cutting the wires at a point close to the connector.

   Important: Do not re-use a connector (discard it).

2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the VCR connectors, first, disconnect the AC plug from AC supply socket.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d) (d')
110 to 130 V	USA or CANADA	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

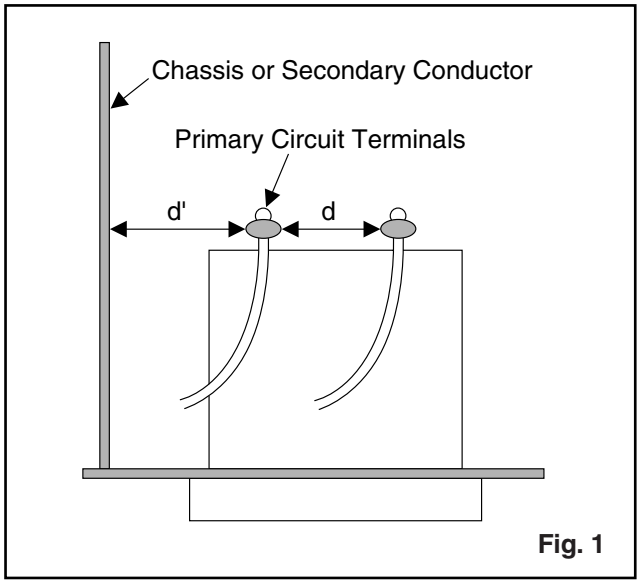


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig. 2 and following table.

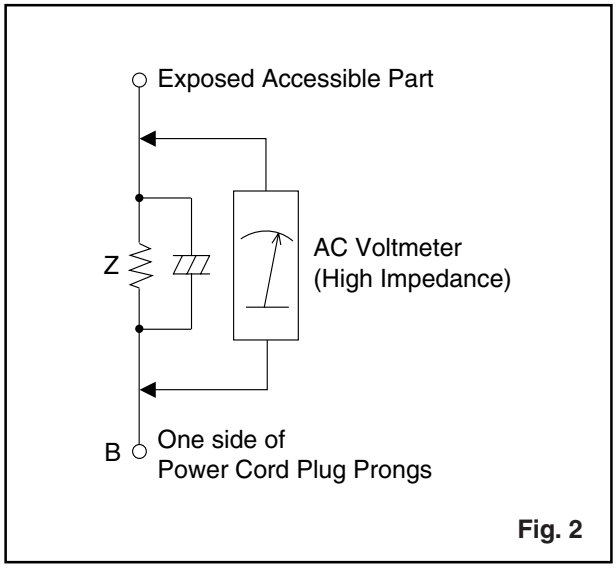


Fig. 2

Table 2 : Leakage current ratings for selected areas

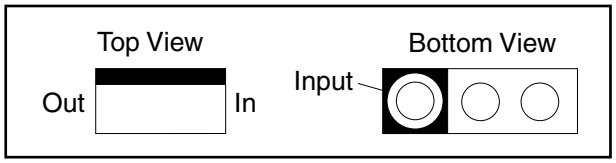
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	USA or CANADA	0.15μF CAP. & 1.5kΩ RES. connected in parallel	i≤0.5mA rms	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

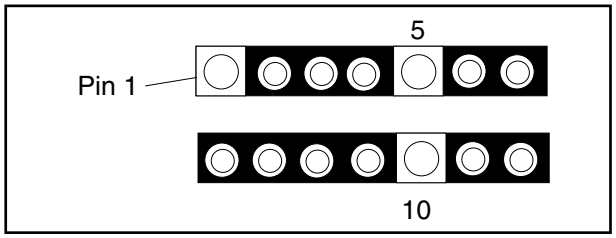
STANDARD NOTES FOR SERVICING

Circuit Board Indications

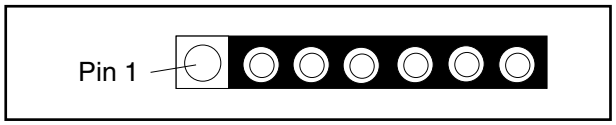
1. The output pin of the 3 pin Regulator ICs is indicated as shown:



2. For other ICs, pin 1 and every 5th pin is indicated as shown:

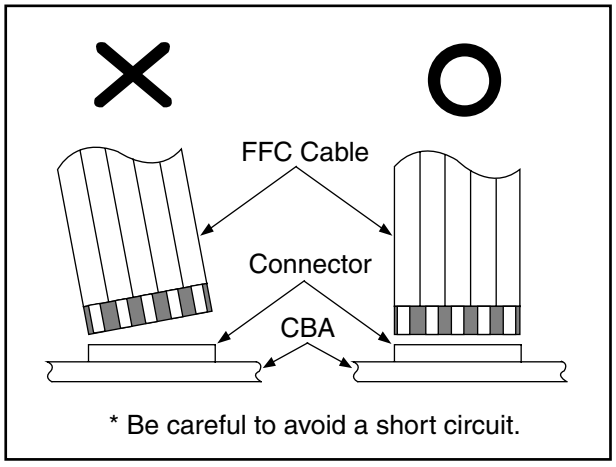


3. The 1st pin of every pin connector are indicated as shown:



Instructions for Connectors

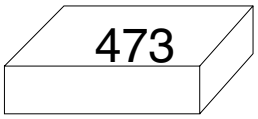
1. When you connect or disconnect FFC cable (connector), be sure to disconnect the AC cord.
2. FFC cable (connector) should be inserted parallel into the connector, not at an angle.



[CBA= Circuit Board Assembly]

How to Read the Values of the Rectangular Type Chip Components

Example:
(a) Resistor



= 473 = 47 [kΩ]

(Top View)

(b) Capacitor

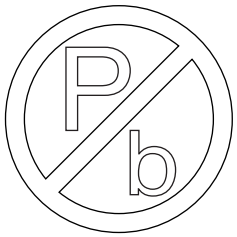
= Not Shown

(Top View)

Caution:
Once chip parts (Resistors, Capacitors, Transistors, etc.) are removed, they must not be reused. Always use a new part.

Pb (Lead) Free Solder

Pb free mark will be found on PCBs used Pb free solder. (Refer to figure.) For PCBs with Pb free mark, be sure to use Pb free solder. For PCBs without Pb free mark, use standard solder.



Pb free mark

Replacement Procedures for Leadless (Chip) Components

The Following Procedures are Recommended for the Replacement of the Leadless Components Used in this Unit.

1. Preparation for replacement

1.1. Pb free solder

a. Soldering Iron
Use a soldering iron for Pb free solder.

b. Solder
Be sure to use Pb free solder.

c. Soldering time
Do not apply heat for more than 4 seconds.

d. Preheating
Leadless capacitor must be preheated before installation. (130°C~150°C, for about two minutes.)

1.2. Standard solder

a. Soldering Iron
Use a pencil-type soldering iron (less than 30 watts).

b. Solder
Eutectic solder (Tin 63%, Lead 37%) is recommended.

c. Soldering time
Do not apply heat for more than 4 seconds.

d. Preheating
Leadless capacitor must be preheated before installation. (130°C~150°C, for about two minutes.)

Notes:

a. Leadless components must not be reused after removal.

b. Excessive mechanical stress and rubbing for the component electrode must be avoided.

2. Removing the leadless component

Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes has melted, remove leadless component with a twisting motion.

Notes:

a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by the twisting action.

b. Take care not to break the copper foil on the printed board

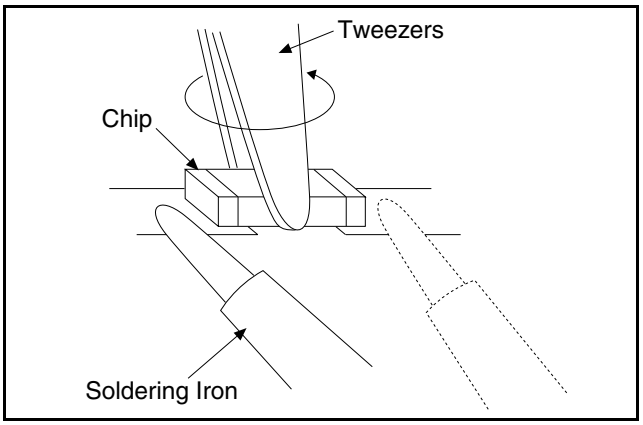
3. Installing the leadless component

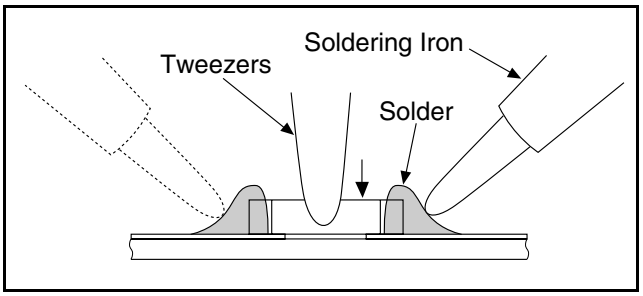
a. Presolder the contact points of the circuit board.

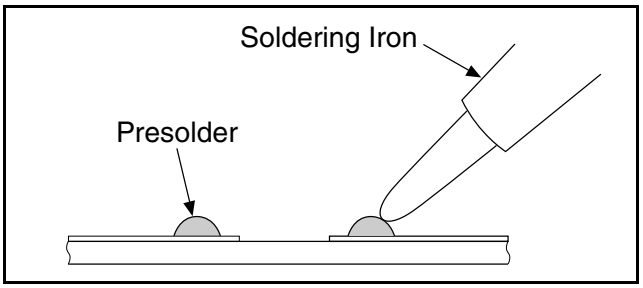
b. Press the part downward with tweezers and solder both electrodes as shown below.

Note:

Do not glue the replacement leadless component to the circuit board.







How to Remove / Install Flat Pack IC

Caution:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not apply the hot air to the chip parts around the Flat Pack-IC for over 6 seconds as damage may occur to the chip parts. Put Masking Tape around the Flat Pack-IC to protect other parts from damage. (Fig. S-1-2)
3. The Flat Pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or solder lands under the IC when removing it.

1. Removal

With Hot - Air Flat Pack - IC Desoldering Machine:

a. Prepare the Hot - Air Flat Pack - IC Desoldering Machine, then apply hot air to Flat Pack - IC (about 5~6 seconds). (Fig. S-1-1)

b. Remove the Flat Pack- IC with tweezers while applying the hot air.

With Soldering Iron:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Lift each lead of the Flat Pack - IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air Desoldering Machine. (Fig. S-1-4)

With Iron Wire:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

c. Pull up on the wire as the solder melts so as to lift the IC leads from the CBA contact pads, while heating the pins using a fine tip soldering iron or hot air blower.

Note:

When using a soldering iron, care must be taken to ensure that the Flat Pack - IC is not being held by glue, or when it is removed from the CBA, it may be damaged if force is used.

2. Installation

a. Using desoldering braid, remove the solder from the foil of each pin of the Flat Pack - IC on the CBA, so you can install a replacement Flat Pack - IC more easily.

b. The "●" mark on the Flat Pack - IC indicates pin 1 (See Fig. S-1-6). Make sure this mark matches the 1 on the CBA when positioning for installation. Then pre - solder the four corners of the Flat Pack-IC (See Fig. S-1-7).

c. Solder all pins of the Flat Pack - IC. Make sure that none of the pins have solder bridges.

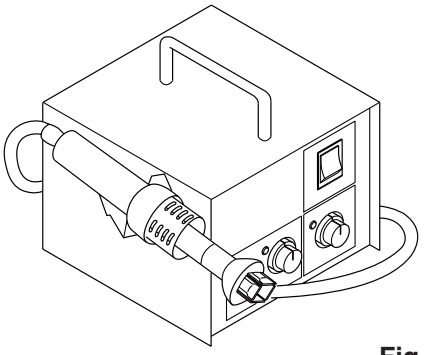


Fig. S-1-1

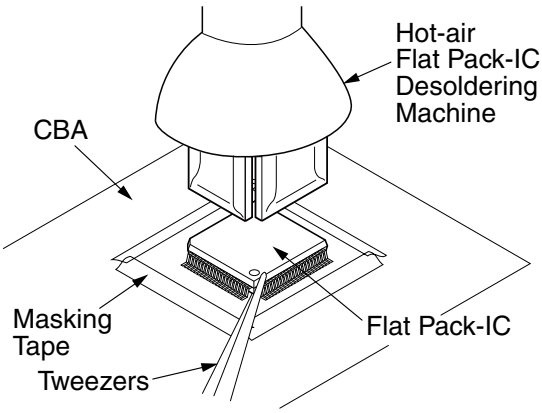


Fig. S-1-2

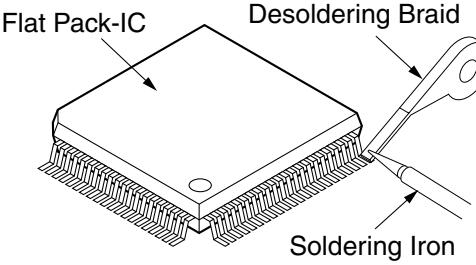


Fig. S-1-3

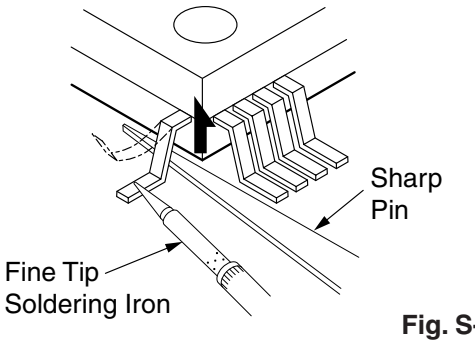


Fig. S-1-4

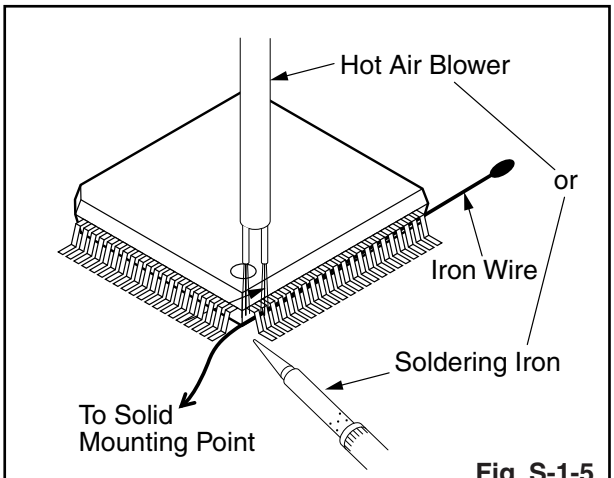
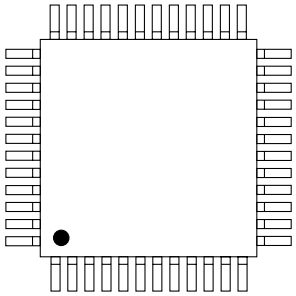


Fig. S-1-5

Example :



Pin 1 of the Flat Pack-IC
is indicated by a " ● " mark.

Fig. S-1-6

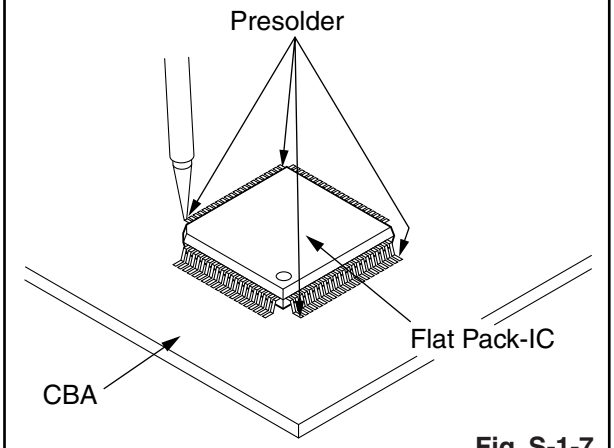


Fig. S-1-7

Instructions for Handling Semiconductors

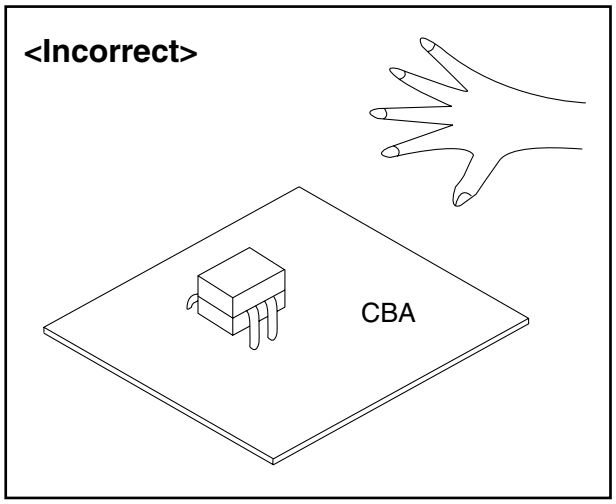
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

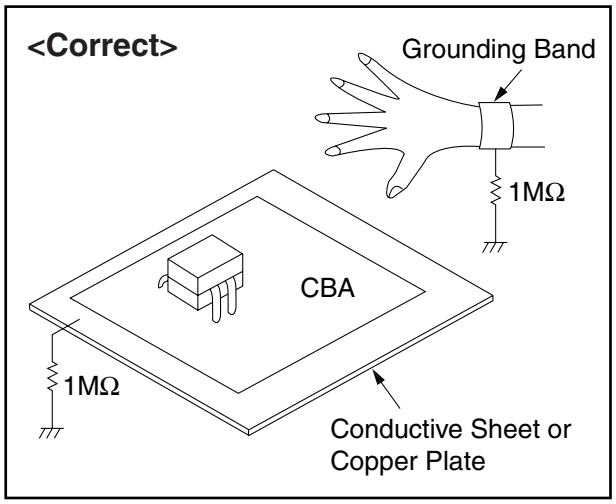
Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

Ground for Work Bench

Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the work bench or other surface, where the semiconductors are to be placed. Because the static electricity charge on the clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors to clothing.





PREPARATION FOR SERVICING

How to Enter the Service Mode

Caution: 1

1. Optical sensors system are used for Tape Start and End Sensor on this equipment. Read this page carefully and prepare as described on this page before starting to service; otherwise, the unit may operate unexpectedly.

Preparing: 1

1. Cover Q202 (START SENSOR) and Q201 (END SENSOR) with Insulation Tape or enter the service mode to activate Sensor Inhibition automatically.

Note: Avoid playing, rewinding or fast forwarding the tape to its beginning or end, because both Tape End Sensors are not active.

How to Enter the Service Mode

1. Turn power on.
2. Use service remote control unit and press WAKE-UP/SLEEP key. (See page 1-6-1)
3. When entering the service mode, one of the number (1, 2 or 4) will display at corners of the screen.
4. During the service mode, electrical adjustment mode can be selected by remote control key (service remote control unit).

   Details are as follows.

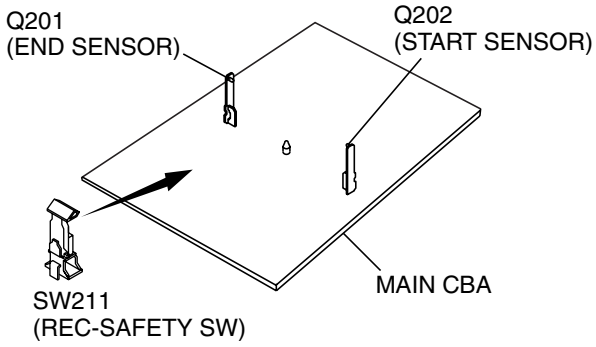
Key	Adjustment Mode
MENU	Picture adjustment mode: Press the MENU button to change from BRT (Bright), *CNT (Contrast), *COL (Color), *TNT(Tint) and *V-T. Press CH UP/ DOWN key to display Initial Value. *Marked items are not necessary to adjust normally.
0	C-Trap and Y DL Time TV/Y DL Time EXT/Y SW LPF/Black Stretch Off/ Black Stretch CONT/C. Angle adjustment mode: See adjustment instructions page 1-6-2 and 1-6-3.
1	No need to use.
2	H adjustment mode: See adjustment instructions page 1-6-2.
3	No need to use.
4	Auto record mode: Perform recording (15 Sec.)-->Stop-->Rewind (Zero return) automatically.
5	Head switching point adjustment mode: See adjustment instructions page 1-6-6.
6	No need to use.
7	Purity check mode: Shows Red, Green, Blue or White cyclically on the screen each time the "7" key is pressed.
8	H. Shift adjustment mode: See adjustment instructions page 1-6-4.
9	V.size/V. shift adjustment: See adjustment instructions page 1-6-4.
VOL ▼	Initial Setting mode: See adjustment instructions page 1-6-2. Cut-off Adjustment mode: See adjustment instructions page 1-6-4.

Caution: 2

1. The deck mechanism assembly is mounted on the Main CBA directly, and SW211 (REC-SAFETY SW) is mounted on the Main CBA. When deck mechanism assembly is removed from the Main CBA due to servicing, this switch can not be operated automatically.

Preparing: 2

1. To eject the tape, press the STOP/EJECT button on the unit (or Remote Control).
2. When you want to record during the Service mode, press the Rec button while depressing SW211 (REC-SAFETY SW) on the Main CBA.



CABINET DISASSEMBLY INSTRUCTIONS

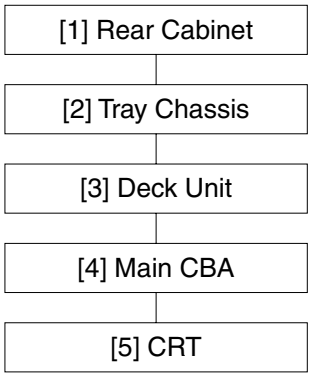
[SRC2213W]

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.

Caution !

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Rear Cabinet	1, 2	4(S-1), (S-2)	1
[2]	Tray Chassis	3, 5	Anode Cap, CN505, CRT CBA, CN601, CN801, CN571	2
[3]	Deck Unit	3, 5	7(S-3), (S-4), (S-5), Desolder (CL201, CL401, CL402, CL403)	3
[4]	Main CBA	3, 5	5(S-6), (S-7)	4
[5]	CRT	4	4(S-8)	5
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

(1): Order of steps in Procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the Identification (location) No. of parts in Figures.

(2): Parts to be removed or installed.

(3): Fig. No. showing Procedure of Part Location.

(4): Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
S=Screw, P=Spring, L=Locking Tab, CN=Connector, *=Unhook, Unlock, Release, Unplug, or Desolder
2(S-2) = two screws (S-2)

(5): Refer to the following Reference Notes in the Table.

Reference Notes in the Table

1. Removal of the Rear Cabinet.
   Remove screws 4(S-1) and (S-2).

Caution !

Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

2. Removal of the Tray Chassis.
   Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap. Disconnect the following: Anode Cap, CN505, CRT CBA, CN601, CN571 and CN801. Then, pull the Tray Chassis backward.
3. Removal of the Deck Unit.
   Remove screws 7(S-3), (S-4) and (S-5). Then, desolder connectors (CL201, CL401, CL402, CL403) and lift up the Deck Unit.
4. Removal of the Main CBA.
   Remove screws 5(S-6) and (S-7). Then, pull up the Main CBA.
5. Removal of the CRT.
   Remove screws 4(S-8) and pull the CRT backward.

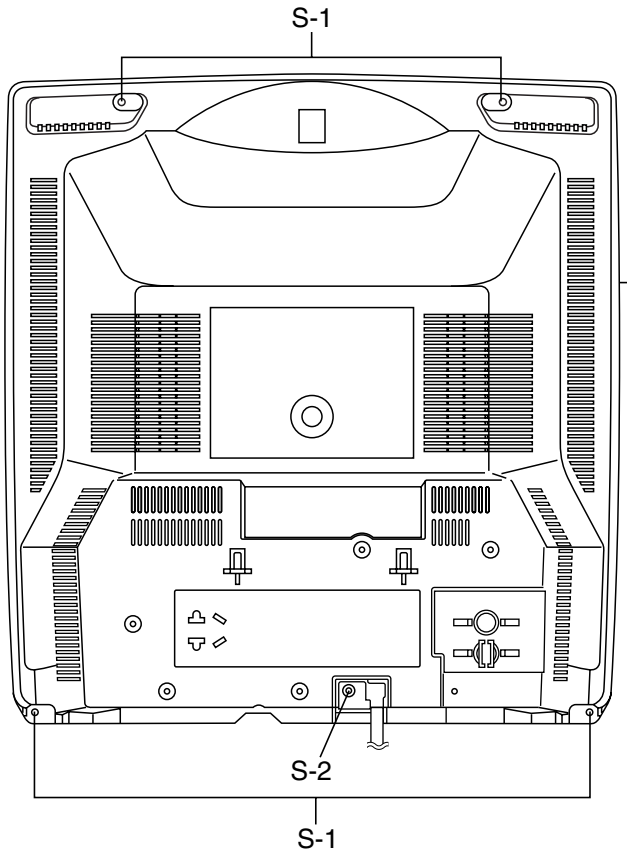


Fig. 1

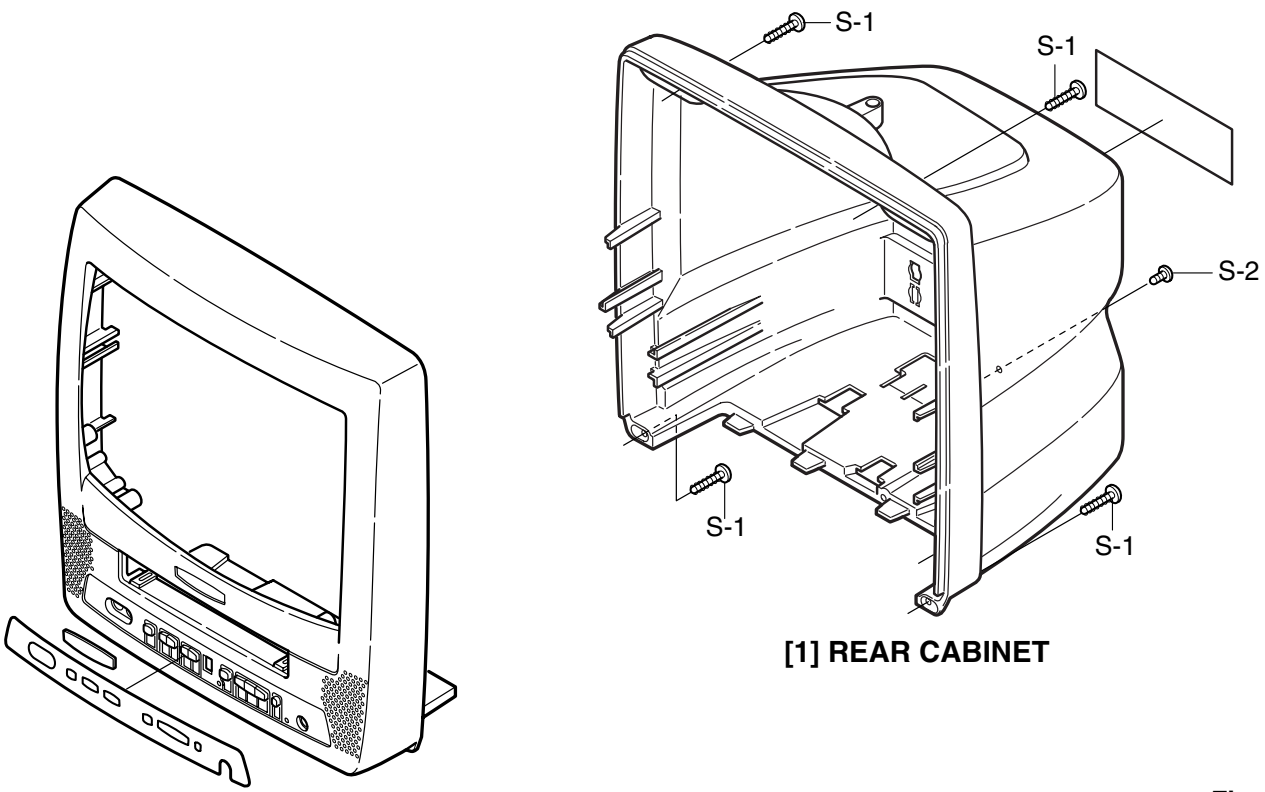


Fig. 2

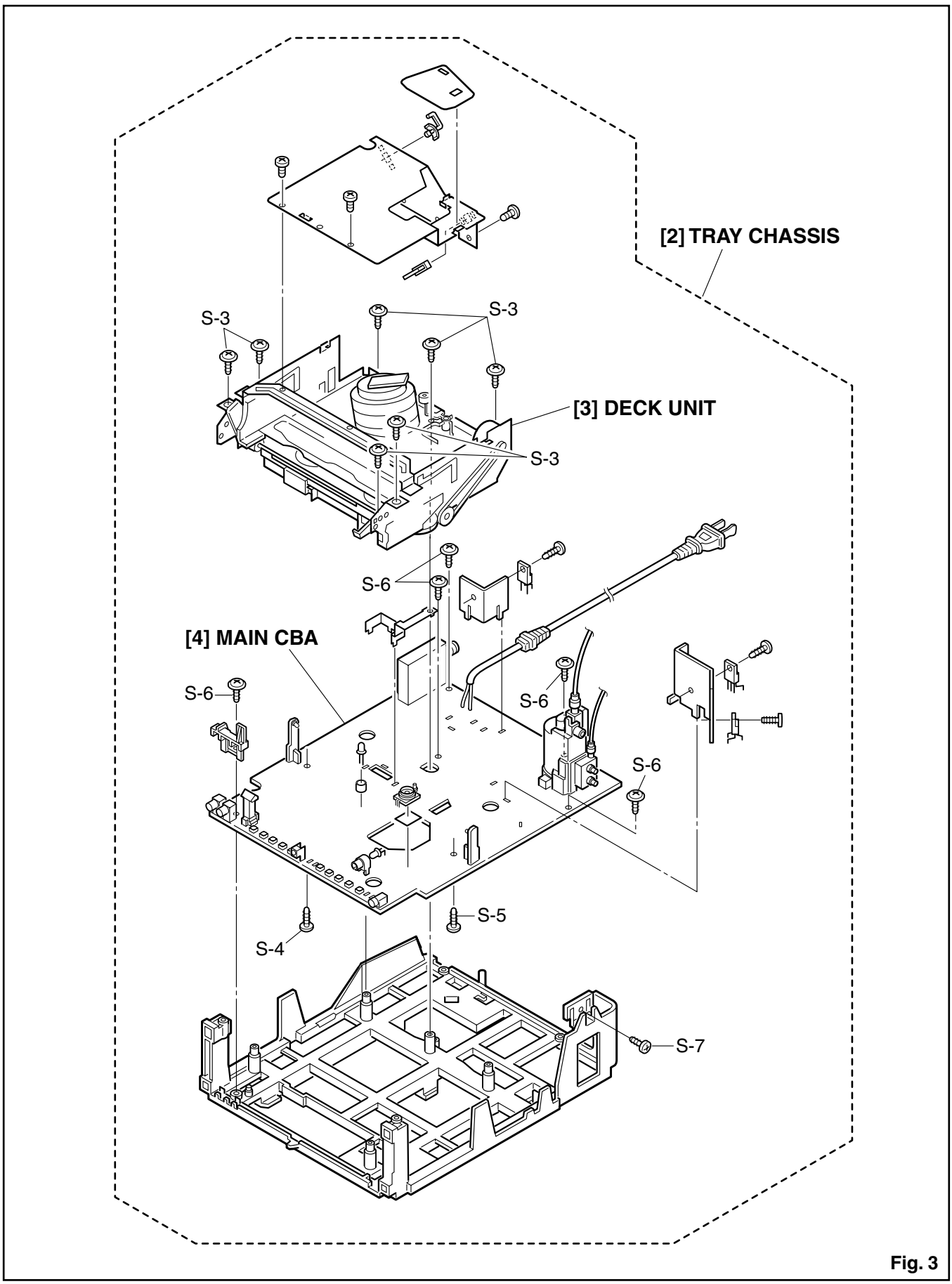


Fig. 3

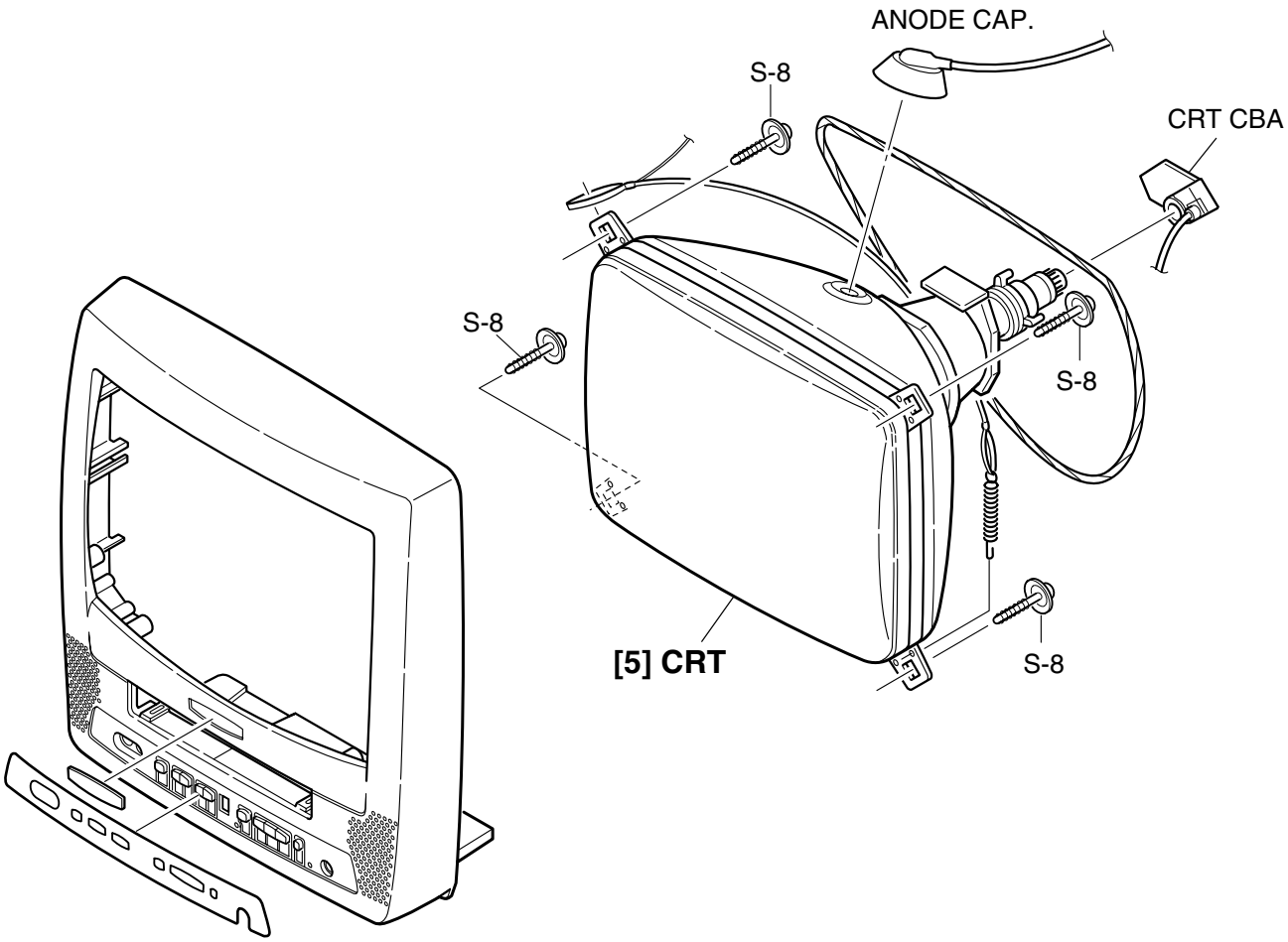


Fig. 4

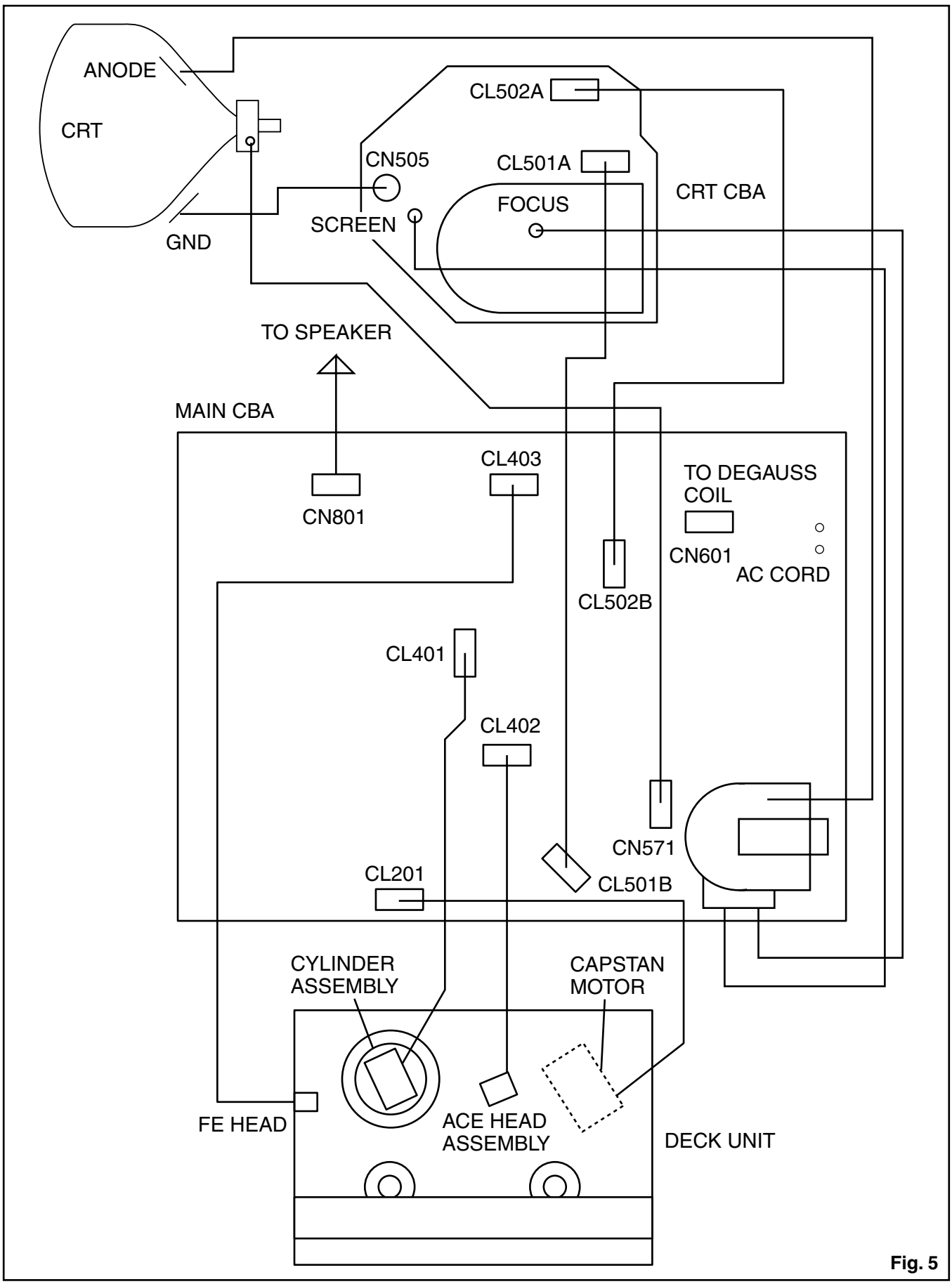

ANODE
CRT
GND
CN505
SCREEN
CL502A
CL501A
FOCUS
CRT CBA
TO SPEAKER
MAIN CBA
CN801
CL403
TO DEGAUSS COIL
CN601
AC CORD
CL502B
CL401
CL402
CN571
CL201
CL501B
CYLINDER ASSEMBLY
CAPSTAN MOTOR
FE HEAD
ACE HEAD ASSEMBLY
DECK UNIT

Fig. 5

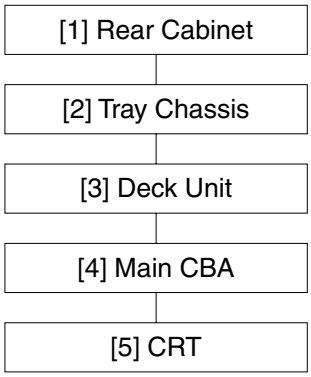
[SRC2419]

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.

Caution !

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Rear Cabinet	1, 2	4(S-1), (S-2)	1
[2]	Tray Chassis	3, 5	Anode Cap, CN505, CRT CBA, CN601, CN801, CN571	2
[3]	Deck Unit	3, 5	7(S-3), (S-4), (S-5) Desolder (CL201, CL401, CL402, CL403)	3
[4]	Main CBA	3, 5	5(S-6), (S-7)	4
[5]	CRT	4	4(S-8)	5
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

(1): Order of steps in Procedure. When reassembling, follow the steps in reverse order.These numbers are also used as the Identification (location) No. of parts in Figures.

(2): Parts to be removed or installed.

(3): Fig. No. showing Procedure of Part Location.

(4): Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
S=Screw, P=Spring, L=Locking Tab, CN=Connector, *=Unhook, Unlock, Release, Unplug, or Desolder
2(S-2) = two screws (S-2)

(5): Refer to the following Reference Notes in the Table.

Reference Notes in the Table

1. Removal of the Rear Cabinet.
   Remove screws 4(S-1) and (S-2).

Caution !

Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

2. Removal of the Tray Chassis.
   Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap. Disconnect the following: Anode Cap, CN505, CRT CBA, CN601, CN571 and CN801. Then, pull the Tray Chassis backward.
3. Removal of the Deck Unit.
   Remove screws 7(S-3), (S-4) and (S-5). Then, desolder connectors (CL201, CL401, CL402, CL403) and lift up the Deck Unit.
4. Removal of the Main CBA.
   Remove screws 5(S-6) and (S-7). Then, pull up the Main CBA.
5. Removal of the CRT.
   Remove screws 4(S-8) and pull the CRT backward.

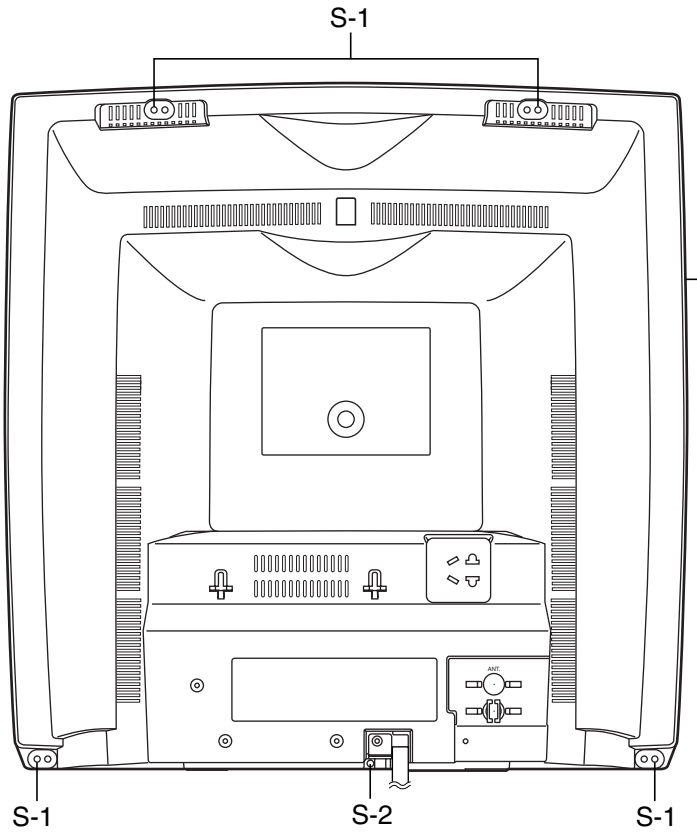


Fig. 1

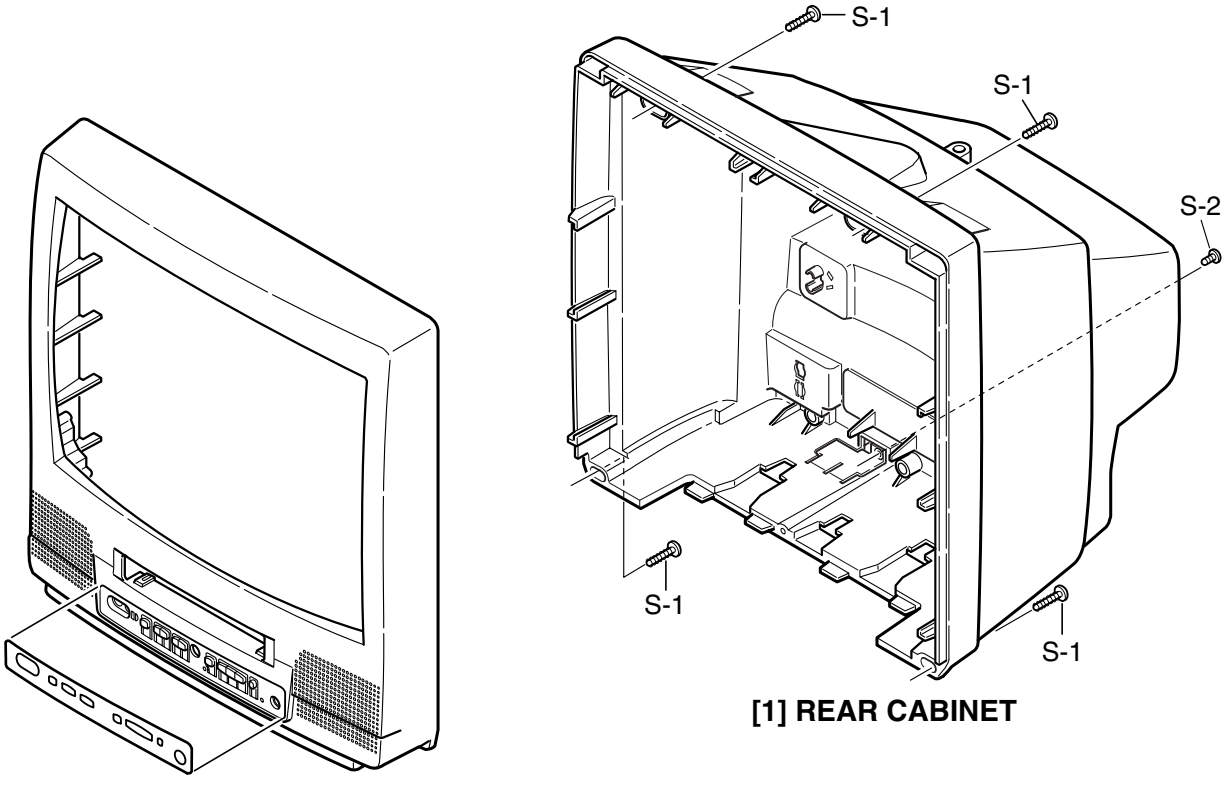


Fig. 2

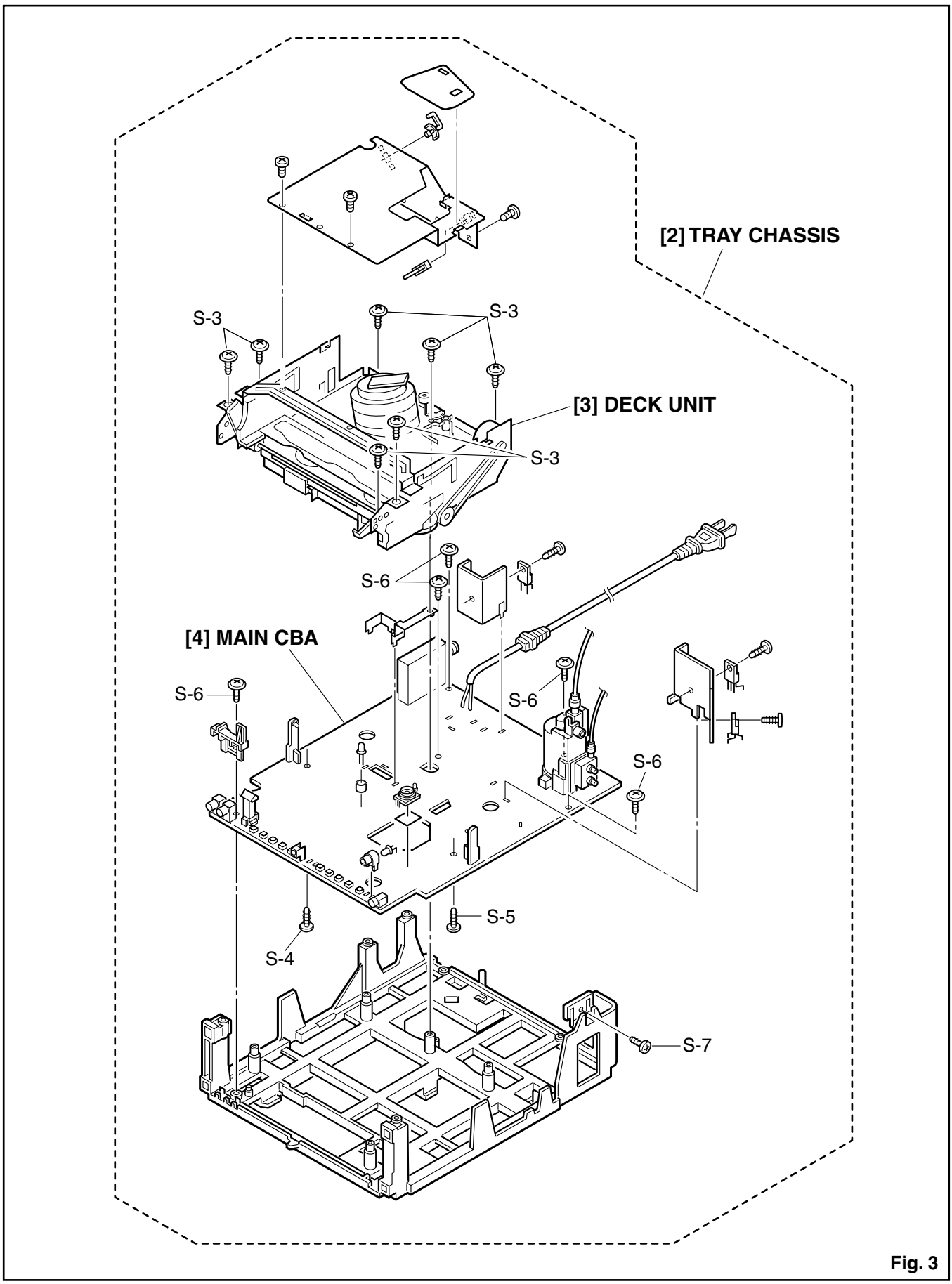


Fig. 3

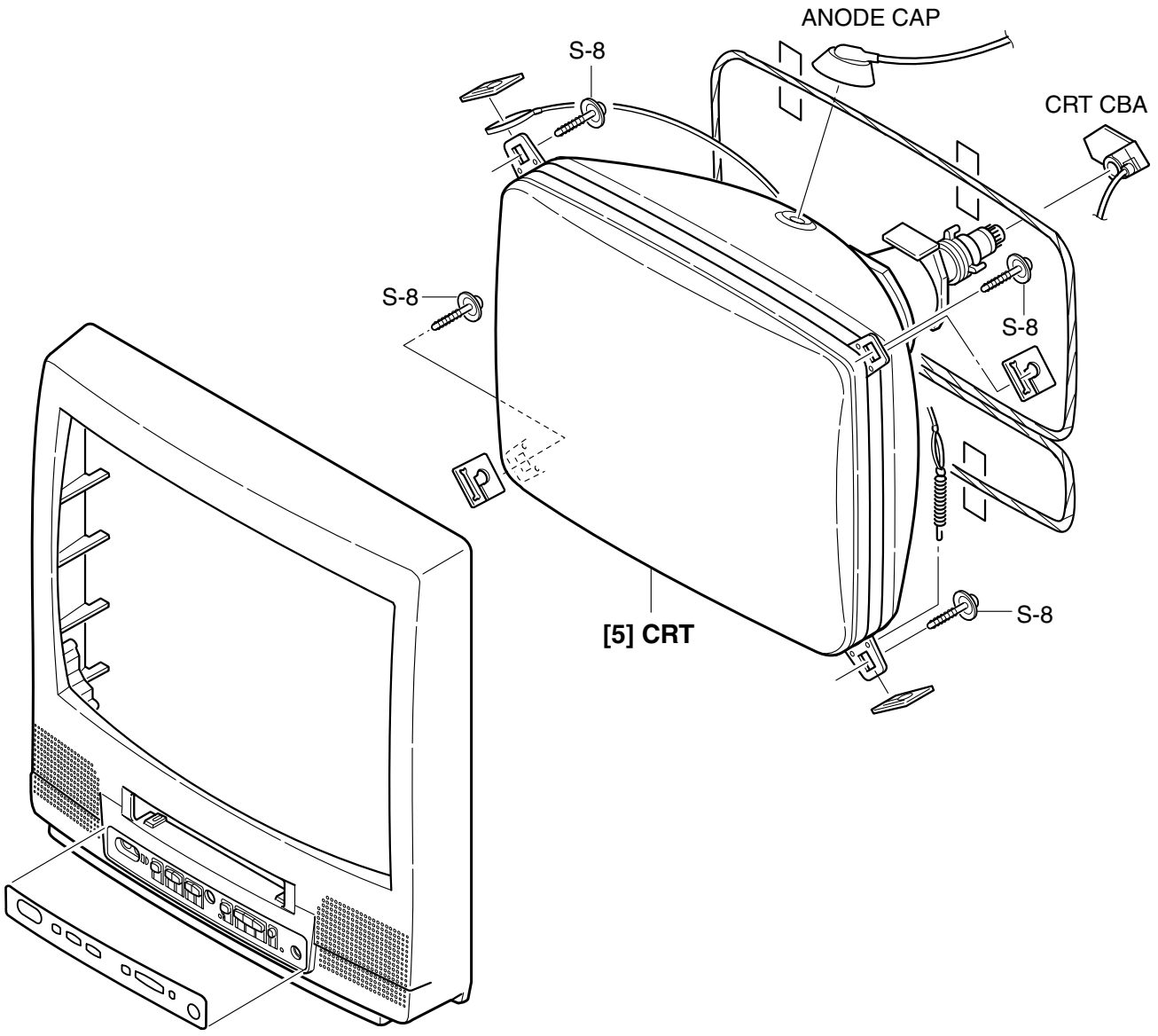


Fig. 4

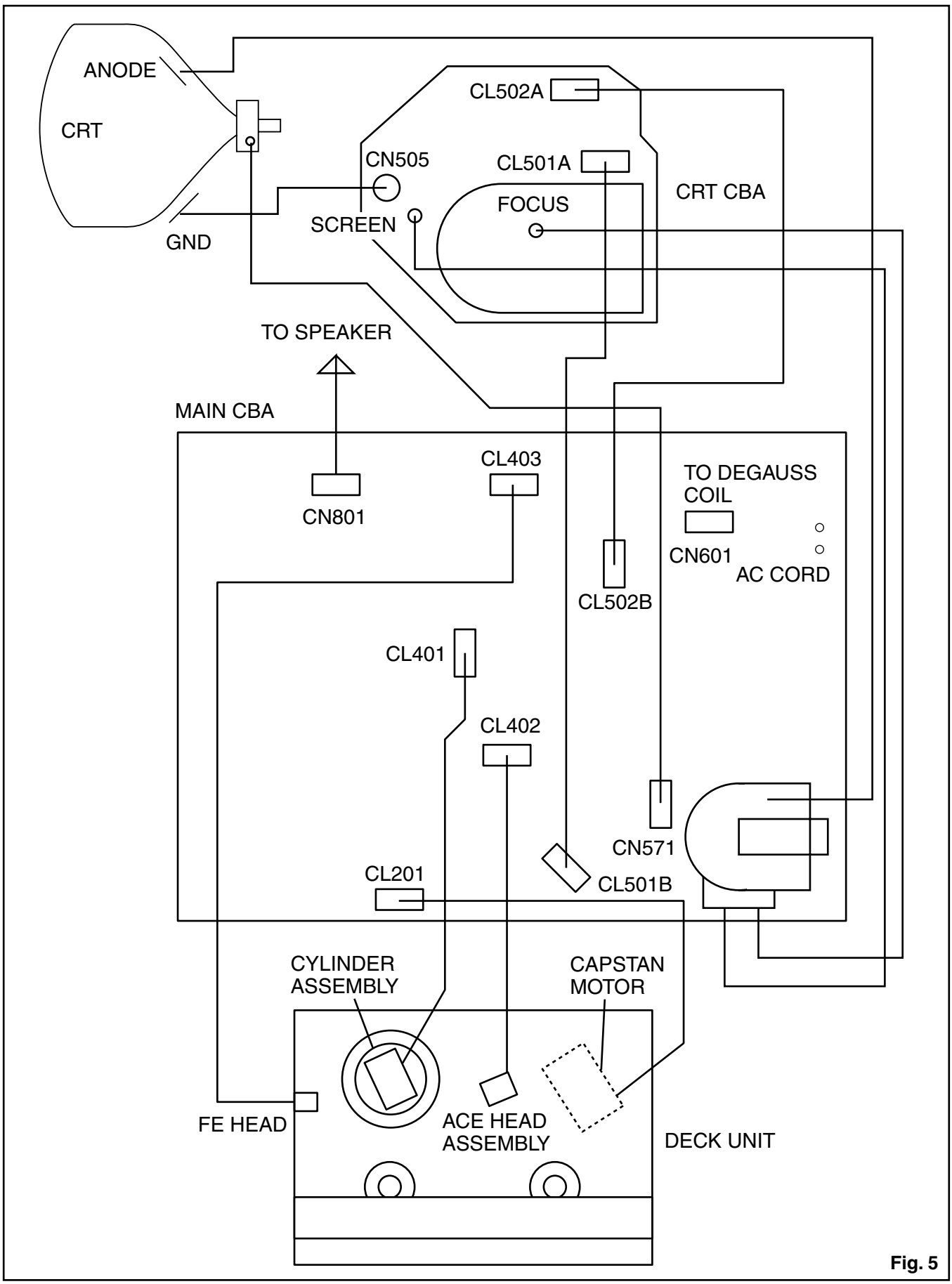

ANODE
CRT
GND
CN505
SCREEN
CL502A
CL501A
FOCUS
CRT CBA
TO SPEAKER
MAIN CBA
CN801
CL403
TO DEGAUSS COIL
CN601
AC CORD
CL502B
CL401
CL402
CN571
CL201
CL501B
CYLINDER ASSEMBLY
CAPSTAN MOTOR
FE HEAD
ACE HEAD ASSEMBLY
DECK UNIT

Fig. 5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note:

"CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

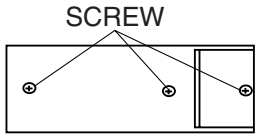
Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustments only after all repairs and replacements have been completed.
Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

1. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
2. AC Milli Voltmeter (RMS)
3. Alignment Tape (FL8A, FL8N), Blank Tape
4. DC Voltmeter
5. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div,
   F-Range: DC~AC-60MHz
6. Frequency Counter
7. Plastic Tip Driver

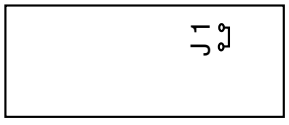
How to make service remote control unit:

1. Prepare remote control unit. (Part No. N0107UD or N0150UD) Remove 3 screws from the back lid. (Fig. 1-1)



Remote control unit (Bottom) **Fig. 1-1**

2. Remote control unit: Part No. N0107UD
   Add J1 (Jumper Wire) to the remote control CBA. (Fig. 1-2)



Remote control CBA **Fig. 1-2**

   Remote control unit: Part No. N0150UD
   Cut off pin 10 of the remote control microprocessor and short circuit pins 10 and 17 of the microprocessor with a jumper wire.

Note: The remote control with the unit cannot be used as service remote control unit.

How to Set up the Service mode:

Service mode:

1. Use the service remote control unit.
2. Turn the power on.
3. Press "WAKE-UP/SLEEP" button on the service remote control unit.

[SRC2213W]

1-1. DC 105V (+B) Adjustment

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
D613 Cathode (+B) C613(-) (GND)	VR601	---	-----
Tape	M. EQ.	Spec.	
---	DC Voltmeter Plastic Tip Driver	+105±0.5V DC	

Note: D613 Cathode (+B), C613(-) (GND),
VR601 --- Main CBA

1. Connect the unit to AC Power Outlet.
2. Connect DC Volt Meter to D613 Cathode (+B) and C613(-) (GND).
3. Adjust VR601 so that the voltage of D613 Cathode (+B) becomes +105±0.5V DC.

[SRC2419]

1-2. DC 114V (+B) Adjustment

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
D613 Cathode (+B) C613(-) (GND)	VR601	---	-----
Tape	M. EQ.	Spec.	
---	DC Voltmeter Plastic Tip Driver	+114±0.5V DC	

Note: D613 Cathode (+B), C613(-) (GND), VR601 --- Main CBA

1. Connect the unit to AC Power Outlet.
2. Connect DC Volt Meter to D613 Cathode (+B) and C613(-) (GND).
3. Adjust VR601 so that the voltage of D613 Cathode (+B) becomes +114±0.5V DC.

2. Initial Setting

General

1. Enter the Service mode. (See page 1-4-1)
2. Press "VOL ▼" button on the service remote control unit. Display changes "C/D," "7F," "FM," "ACCESS CODE," and "RC5" cyclically when "VOL ▼" button is pressed.
3. To set each data value shown below, press "CH ▲ / ▼" buttons on the service remote control unit.

   7F --- Set to "FF."

   FM --- Set to "ON." [SRC2213W]

   Set to "OFF." [SRC2419]

   ACCESS CODE --- Set to "ON."

   RC5 --- Set to "OFF."

Note: C/D data value does not need to be adjusted at this moment.

3-1. H Adjustment

Purpose: To get correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
R583	CH ▲ / ▼ buttons	Video	---
Tape	M. EQ.	Spec.	
---	Frequency Counter	15.734kHz±300Hz	

Note: R583 --- Main CBA

1. Connect Frequency Counter to R583.
2. Set the unit to the VIDEO mode and no input is necessary. Enter the Service mode. (See page 1-4-1.)
3. Operate the unit for at least 20 minutes.
4. Press "2" button on the remote control unit and select H-Adj mode. (Press "2" button, then display will change H-Adj.)
5. Press "CH ▲ / ▼" buttons on the remote control unit so that the display will change "0" to "7." At this moment, choose display "0" to "7" when the Frequency counter display is closest to 15.734kHz±300Hz.
6. Turn the power off and on again.

3-2. C-Trap Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If C-Trap Adjustment is incorrect, stripes will appear on the screen.

Test point	Adj. Point	Mode	Input
J271 (B-OUT)	CH ▲ / ▼ buttons	---	Color Bar
Tape	M. EQ.	Spec.	
---	Oscilloscope Pattern Generator	---	
Figure			

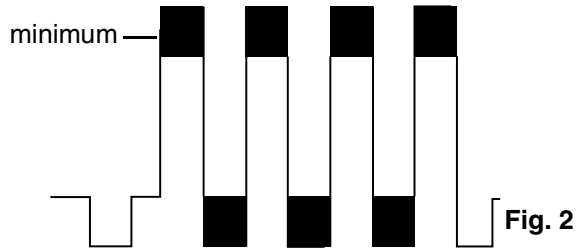


Fig. 2

Note: J271 (B-Out)--- Main CBA

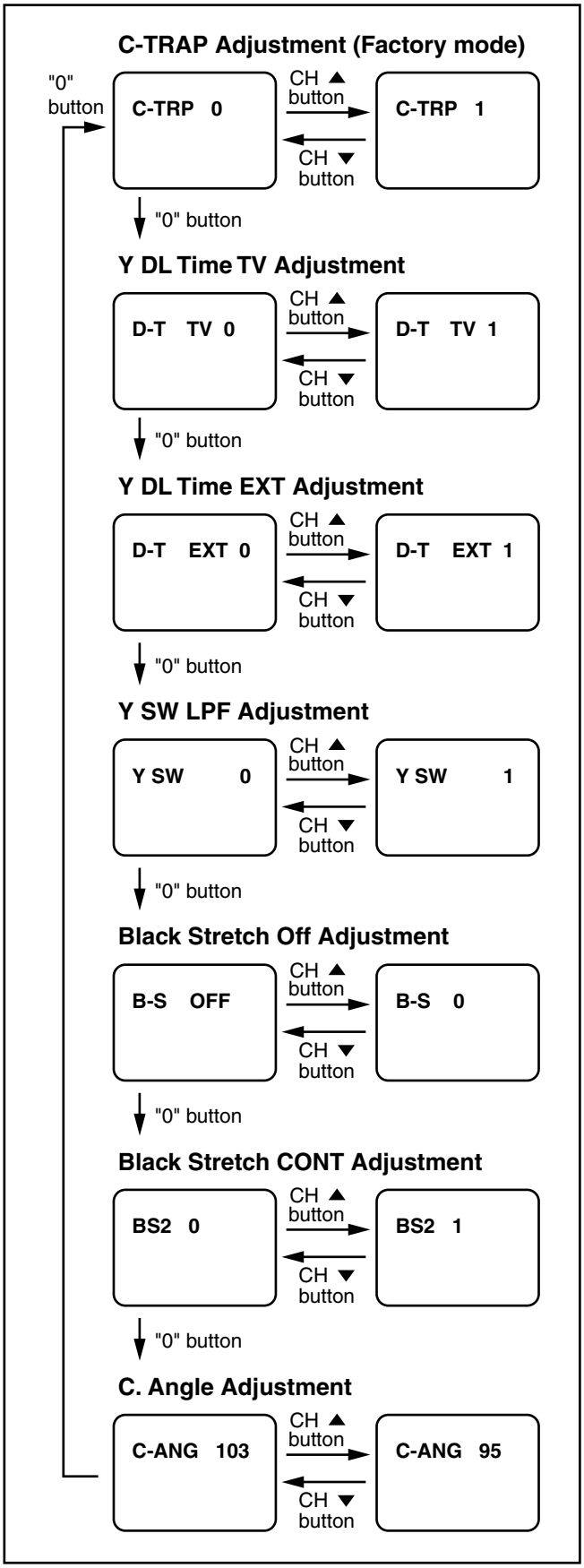
1. Connect Oscilloscope to J271.
2. Input a color bar signal from RF input.
   Enter the Service mode. (See page 1-4-1.)
3. Press "0" button on the remote control unit and select C-TRAP mode.
4. Press "CH ▲ / ▼" buttons on the remote control unit so that the carrier leakage B-Out (3.58MHz) value becomes minimum on the oscilloscope.
5. Turn the power off and on again.

3-3. Y DL Time TV/Y DL Time EXT/ Y SW LPF/Black Stretch Off/ Black Stretch CONT/C. Angle Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If Y DL Time Adjustment is incorrect, stripes will appear on the screen.

1. Enter the Service mode. (See page 1-4-1.)
2. **Y DL Time TV Adjustment:** Press "0" button on the service remote control unit twice to show "D-T TV" on the display.
   Y DL Time EXT Adjustment: Press "0" button on the service remote control unit three times to show "D-T EXT" on the display.
   Y SW LPF Adjustment: Press "0" button on the service remote control unit four times to show "Y SW" on the display.
   Black Stretch Off Adjustment: Press "0" button on the service remote control unit five times to show "B-S" on the display.
   Black Stretch CONT Adjustment: Press "0" button on the service remote control unit six times to show "BS2" on the display.
   C. Angle Adjustment: Press "0" button on the service remote control unit seven times to show "C-ANG" on the display.
3. **Y DL Time TV Adjustment:** Select "2" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Y DL Time EXT Adjustment: Select "2" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Y SW LPF Adjustment: Select "1" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Black Stretch Off Adjustment: Select "OFF" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Black Stretch CONT Adjustment: Select "0" by pressing "CH ▲ / ▼" buttons on the service remote control.
   C. Angle Adjustment: Select "103" by pressing "CH ▲ / ▼" buttons on the service remote control.



4. V. Size Adjustment

Purpose: To obtain correct vertical height of screen image.

Symptom of Misadjustment: If V. Size is incorrect, vertical height of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-4-1.)
   Press "9" button on the remote control unit and select V-S mode. (Press "9" button then display will change to V-P and V-S).
2. Input monoscope pattern.
3. Press "CH ▲ / ▼" buttons on the remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.

5. V. Shift Adjustment

Purpose: To obtain correct vertical position of screen image.

Symptom of Misadjustment: If V. position is incorrect, vertical position of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-4-1.)
   Press "9" button on the remote control unit and select V-P mode. (Press "9" button then display will change to V-P and V-S).
2. Input monoscope pattern.
3. Press "CH ▲ / ▼" buttons on the remote control unit so that the top and bottom of the monoscope pattern are equal to each other.

6. H. Shift Adjustment

Purpose: To obtain correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-4-1.)
   Press "8" button on the remote control unit and select H-P mode.
2. Input monoscope pattern.
3. Press "CH ▲ / ▼" buttons on the remote control unit so that the left and right side of the monoscope pattern are equal to each other.
4. Turn the power off and on again.

7. Cut-off Adjustment

Purpose: To adjust the beam current of R, G, B, and screen voltage.

Symptom of Misadjustment: White color may be reddish, greenish or bluish.

Test point	Adj. Point	Mode	Input
---	Screen-Control	Ext.	Black Raster / White Raster
Tape	M. EQ.	Spec.	
---	Pattern Generator	See Reference Notes below	

Figure

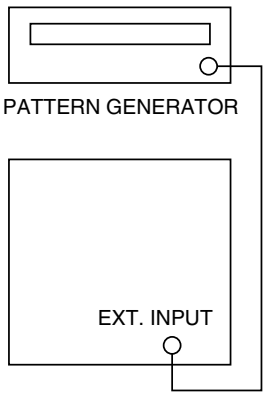


Fig. 3

Notes: Screen Control FBT --- MAIN CBA
F.B.T= Fly Back Transformer
Use the Remote Control Unit

1. Degauss the CRT and allow CRT to operate for 20 minutes before starting the alignment.
2. Set the screen control to minimum position. Input the Black raster signal from RF input.
3. Enter the Service mode. (See page 1-4-1.)
   Dimmed horizontal line appears on the CRT.
4. Press the "VOL ▼" button.
   (Press "VOL ▼" then display will change CUT OFF/ DRIVE adjustment).
5. Choose CUT OFF/DRIVE mode then press "1" button. This adjustment mode is CUT OFF (R).
6. Press the "CH ▲ / ▼" button until the horizontal line becomes white.
7. Choose CUT OFF/DRIVE mode then press "2" button. This adjustment mode is CUT OFF (G). Press "CH ▲ / ▼" until the horizontal line becomes white.
8. Choose CUT OFF/DRIVE mode then press "3" button. This adjustment mode is CUT OFF (B). Press "CH ▲ / ▼" until the horizontal line becomes white.
9. Input the White Raster Signal from Video In.
10. Choose CUT OFF/DRIVE mode then press "4." Adjust the RED DRIVE as needed with the "CH ▲ / ▼" buttons to get the following value, X= 286, Y= 294.
11. Choose CUT OFF/DRIVE mode then press "5." Adjust the BLUE DRIVE as needed with the "CH ▲ / ▼" buttons to get the following value, X= 286.
12. Turn the power off and on again.

8. Sub-Brightness Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: If Sub-Brightness is incorrect, proper brightness cannot be obtained by adjusting the Brightness Control.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	SYMPTE 7.5IRE
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below	

Figure

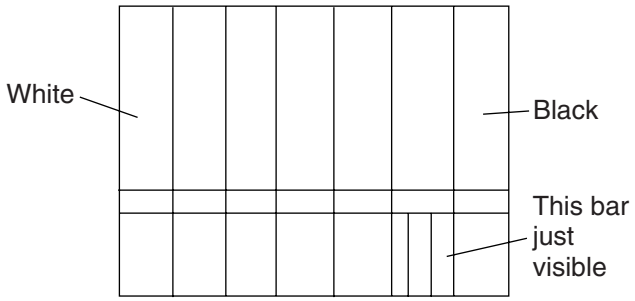


Fig. 4

Note: SYMPTE Setup level --- 7 IRE

1. Enter the Service mode. (See page 1-4-1.) Then input SYMPTE signal from RF input.
2. Press MENU button. (Press MENU button then display will change BRT, CNT, COL, TNT and V-T). Select BRT and press "CH ▲ / ▼" buttons so that the bar is just visible (See above figure).
3. Turn the power off and on again.

9. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: If Focus Adjustment is incorrect, blurred images are shown on the display.

Test point	Adj. Point	Mode	Input
---	Focus Control	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	

Note: Focus VR (FBT) --- MAIN CBA

FBT= Fly Back Transformer

1. Operate the unit more than 30 minutes.
2. Face the unit to the East and degauss the CRT using a Degaussing Coil.
3. Input the monoscope pattern.
4. Adjust the Focus Control on the FBT to obtain clear picture.

10. Head Switching Position Adjustment

Purpose: Determine the Head Switching Position during Playback.

Symptom of Misadjustment: May cause Head Switching Noise or Vertical Jitter in the picture.

Note: Unit reads Head Switching Position automatically and displays it on the screen (Upper Left Corner).

1. Insert the test tape (FL8A, FL8N).
2. Set the unit to the stop condition.
3. Enter the Service mode. (See page 1-4-1.)
4. Press "PAUSE" button on the remote control unit.
5. Confirm that indication of OSD is 6.5H.

11. CCS Text Box Location

When replacing the CRT, the CCS Box might not stay in appropriate position. Then, replace micro computer.

Note: This adjustment automatically done by the microcomputer.

The following 2 adjustments normally are not attempted in the field. They should be done only when replacing the CRT then adjust as a preparation.

12.Purity Adjustment

Purpose: To obtain pure color.

Symptom of Misadjustment: If Color Purity Adjustment is incorrect, large areas of color may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	Deflection Yoke Purity Magnet	---	*Red Color
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	
Figure			

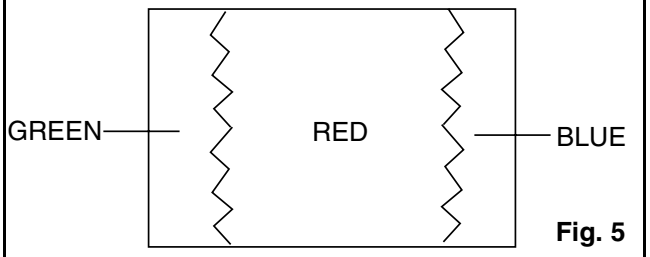


Fig. 5

* This becomes RED COLOR if push 7KEY with a service mode.

1. Set the unit facing east.
2. Operate the unit for over 30 minutes before adjusting.
3. Fully degauss the unit using an external degaussing coil.
4. Set the unit to the AUX mode which is located before CH2 then input a red raster from video in.
5. Loosen the screw on the Deflection Yoke Clamper and pull the Deflection Yoke back away from the screen. (See Fig. 6.)
6. Loosen the Ring Lock and adjust the Purity Magnets so that a red field is obtained at the center of the screen. Tighten Ring Lock. (See Fig. 5,6.)
7. Slowly push the Deflection Yoke toward the bell of the CRT and set it where a uniform red field is obtained.
8. Tighten the clamp screw on the Deflection Yoke.

13. Convergence Adjustment

Purpose: To obtain proper convergence of red, green and blue beams.

Symptom of Misadjustment: If Convergence Adjustment is incorrect, the edge of white letters may have color edges.

Test point	Adj. Point	Mode	Input
---	C.P. Magnet (RB), C.P. Magnet (RB-G), Deflection Yoke	---	Dot Pattern or Crosshatch
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	
Figure			

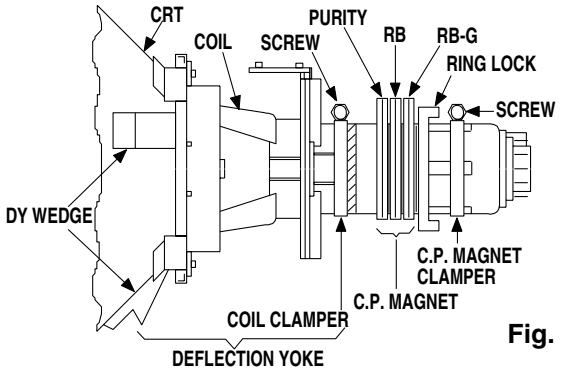


Fig. 6

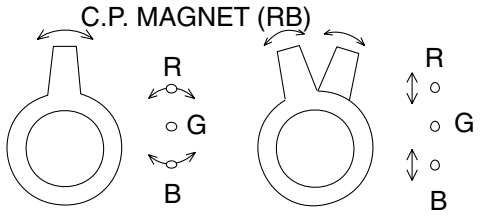


Fig. 7

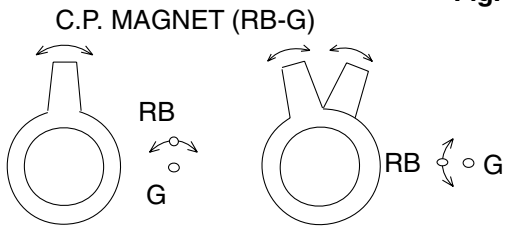
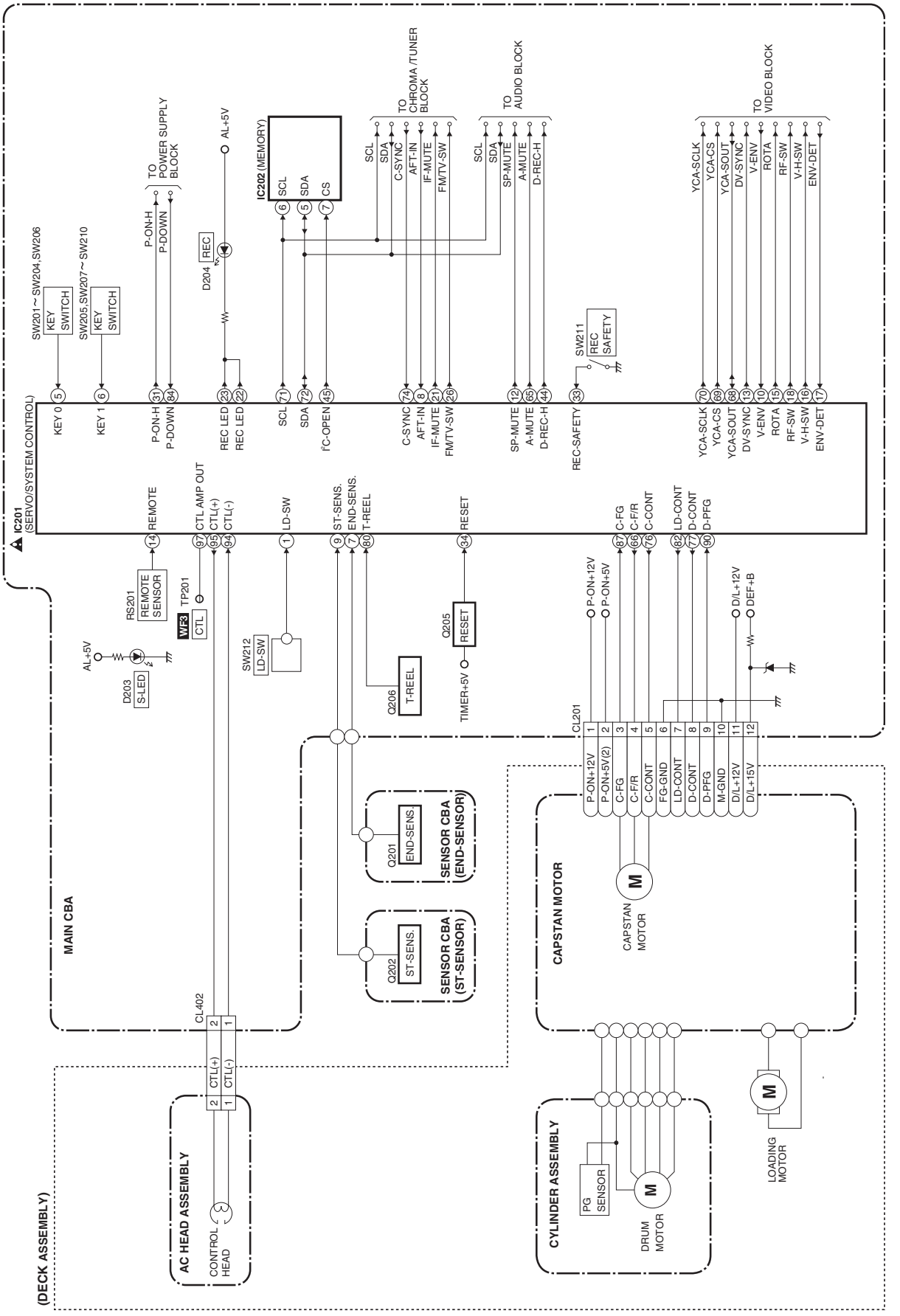


Fig. 8

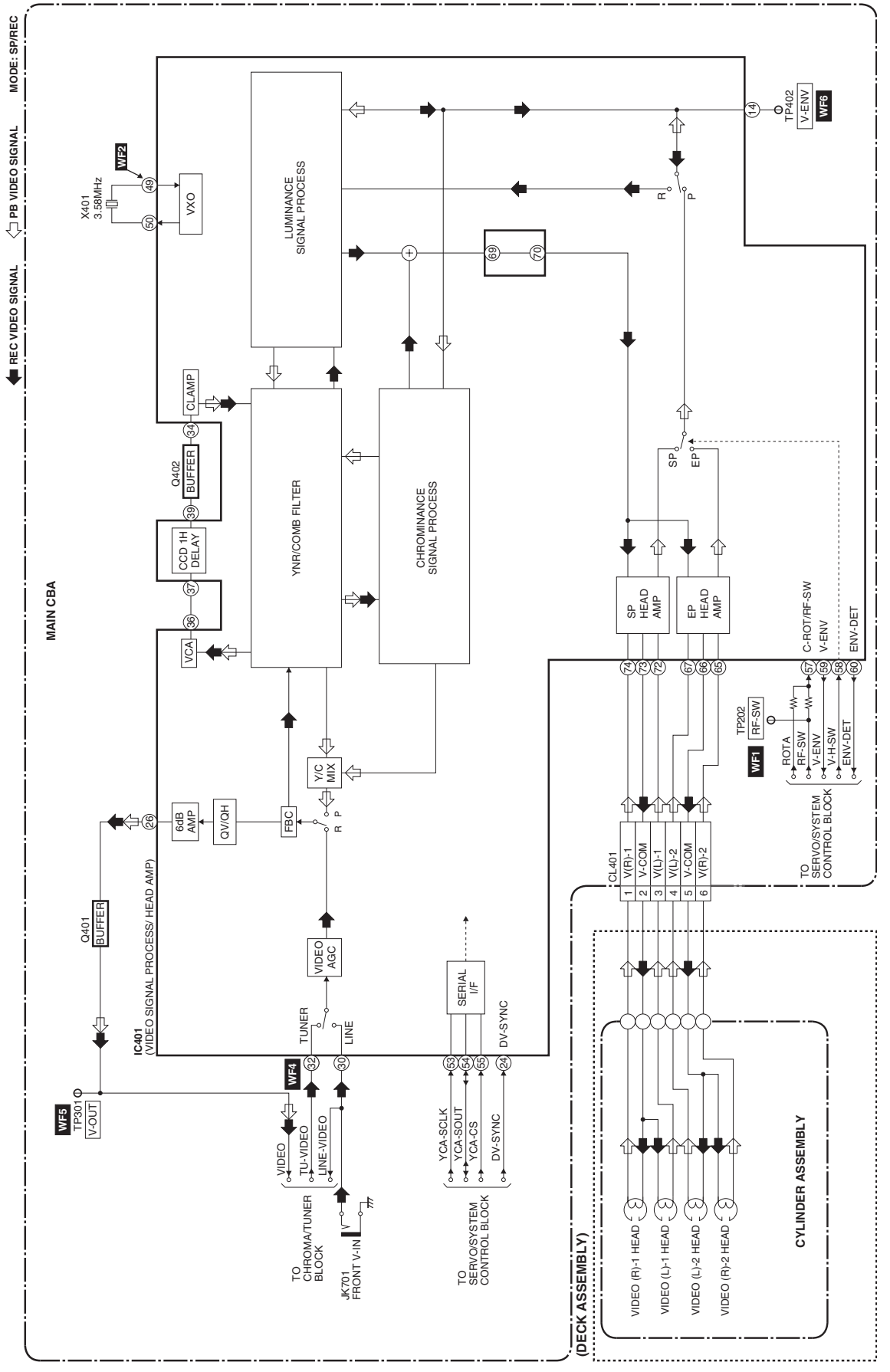
1. Set the unit to the AUX mode which is located before CH2 then input a Dot or crosshatch pattern.
2. Loosen the Ring Lock and align red with blue dots or Crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 7.)
3. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet.
   (See Fig. 8.)
4. Fix the C.P. Magnets by tightening the Ring Lock.
5. Remove the DY Wedges and slightly tilt the Deflection Yoke horizontally and vertically to obtain the best overall convergence.
6. Fix the Deflection Yoke by carefully inserting the DY Wedges between CRT and Deflection Yoke.

BLOCK DIAGRAMS

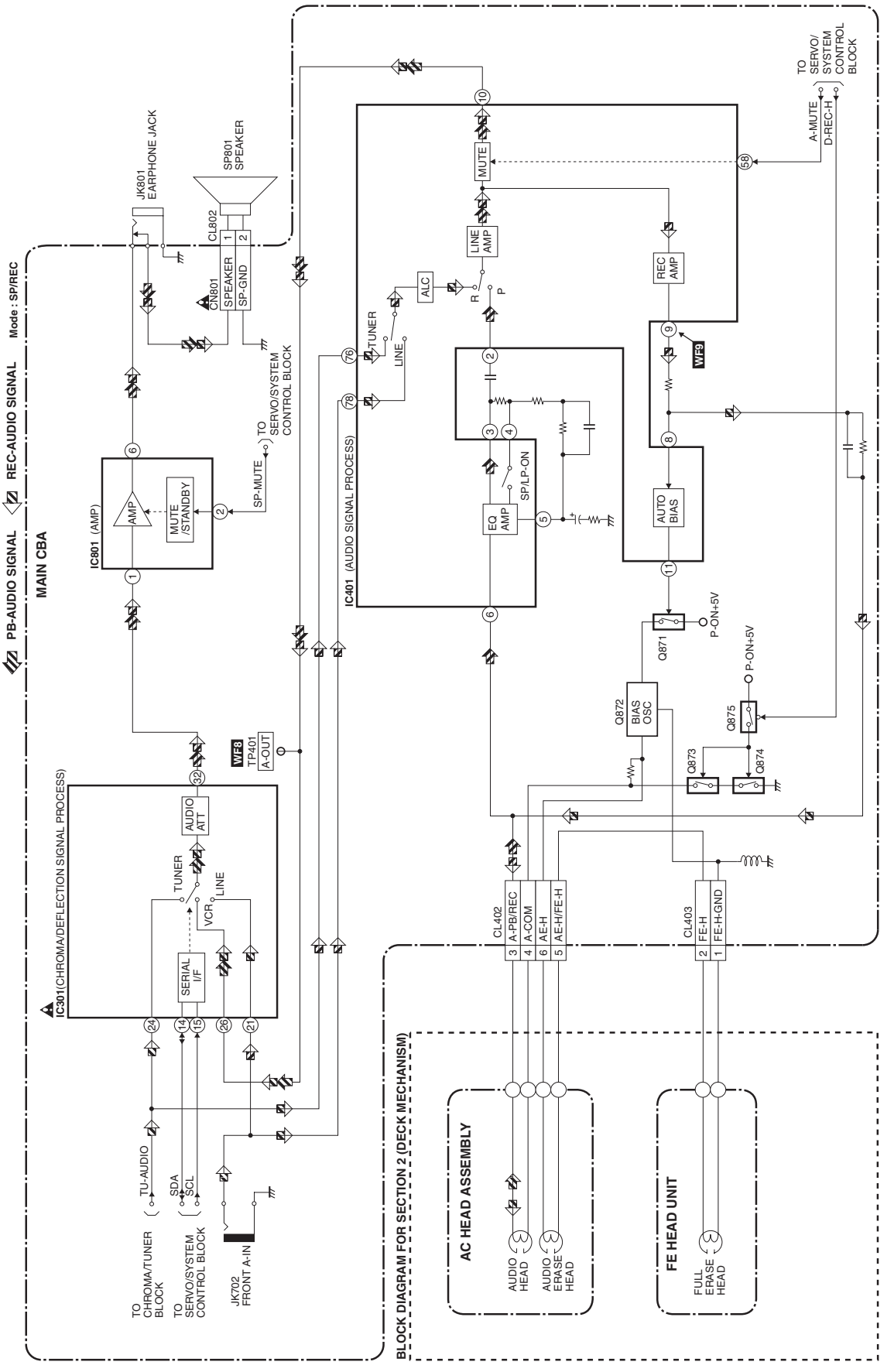
Servo/System Control Block Diagram



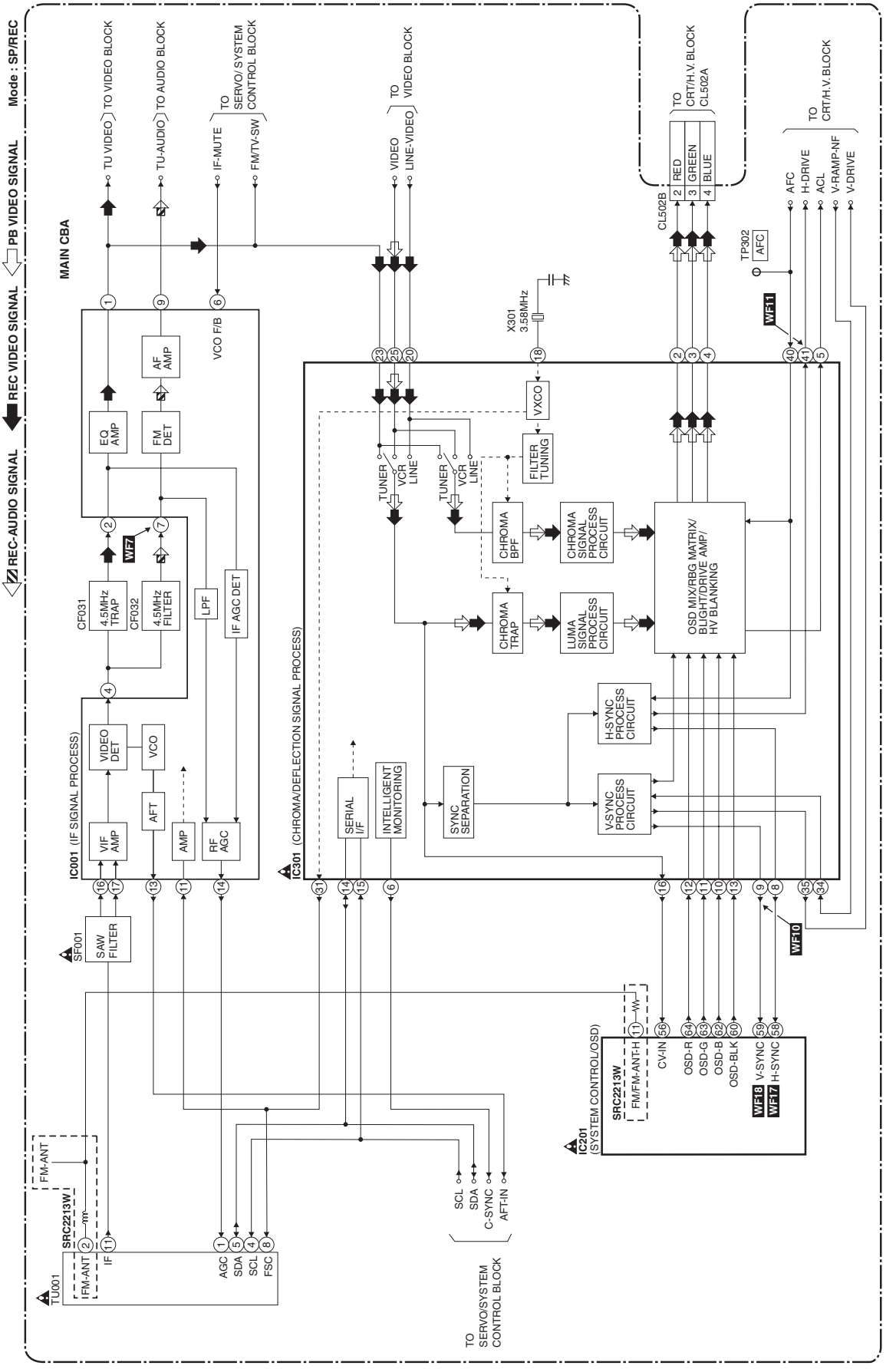
Video Block Diagram



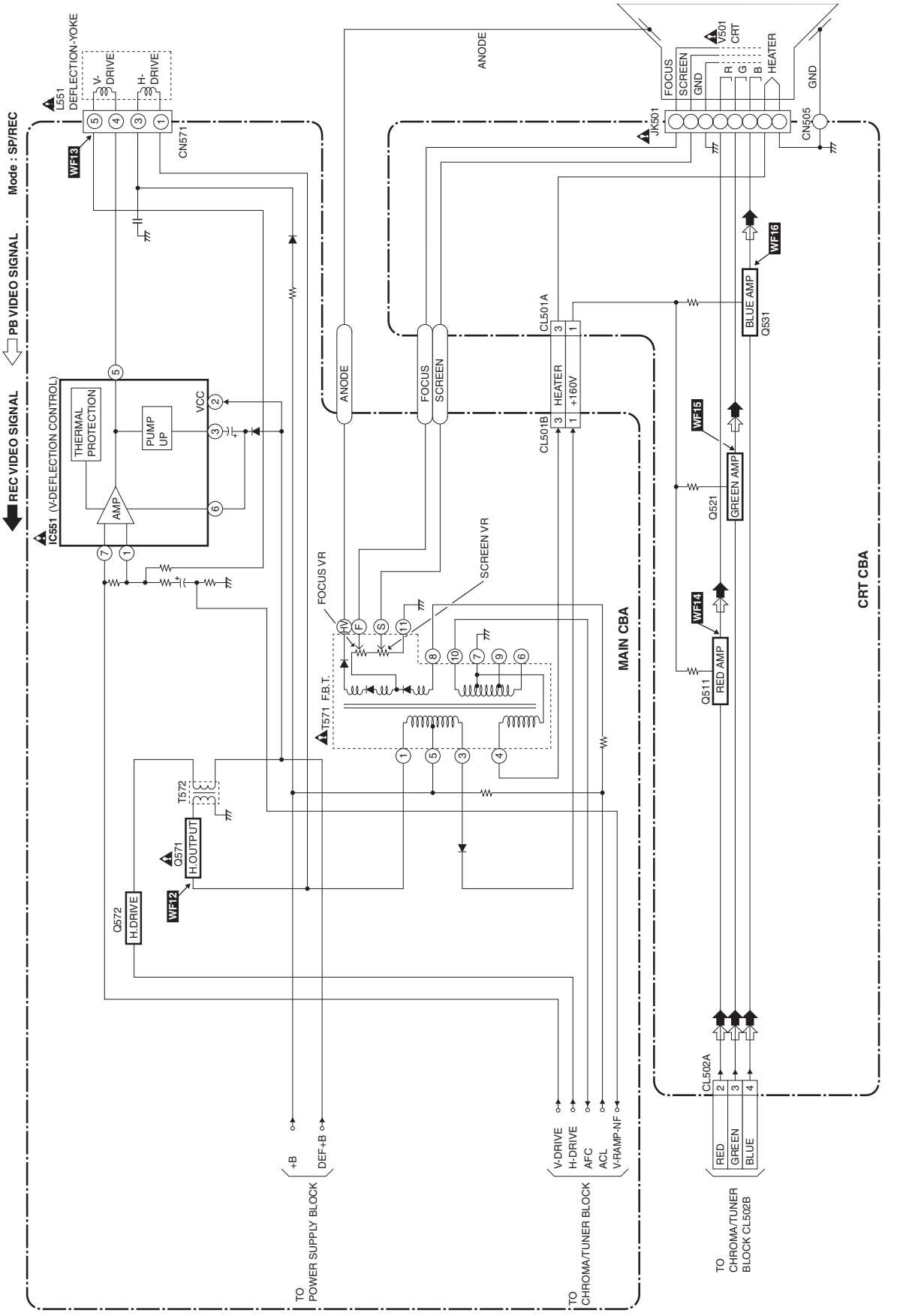
Audio Block Diagram



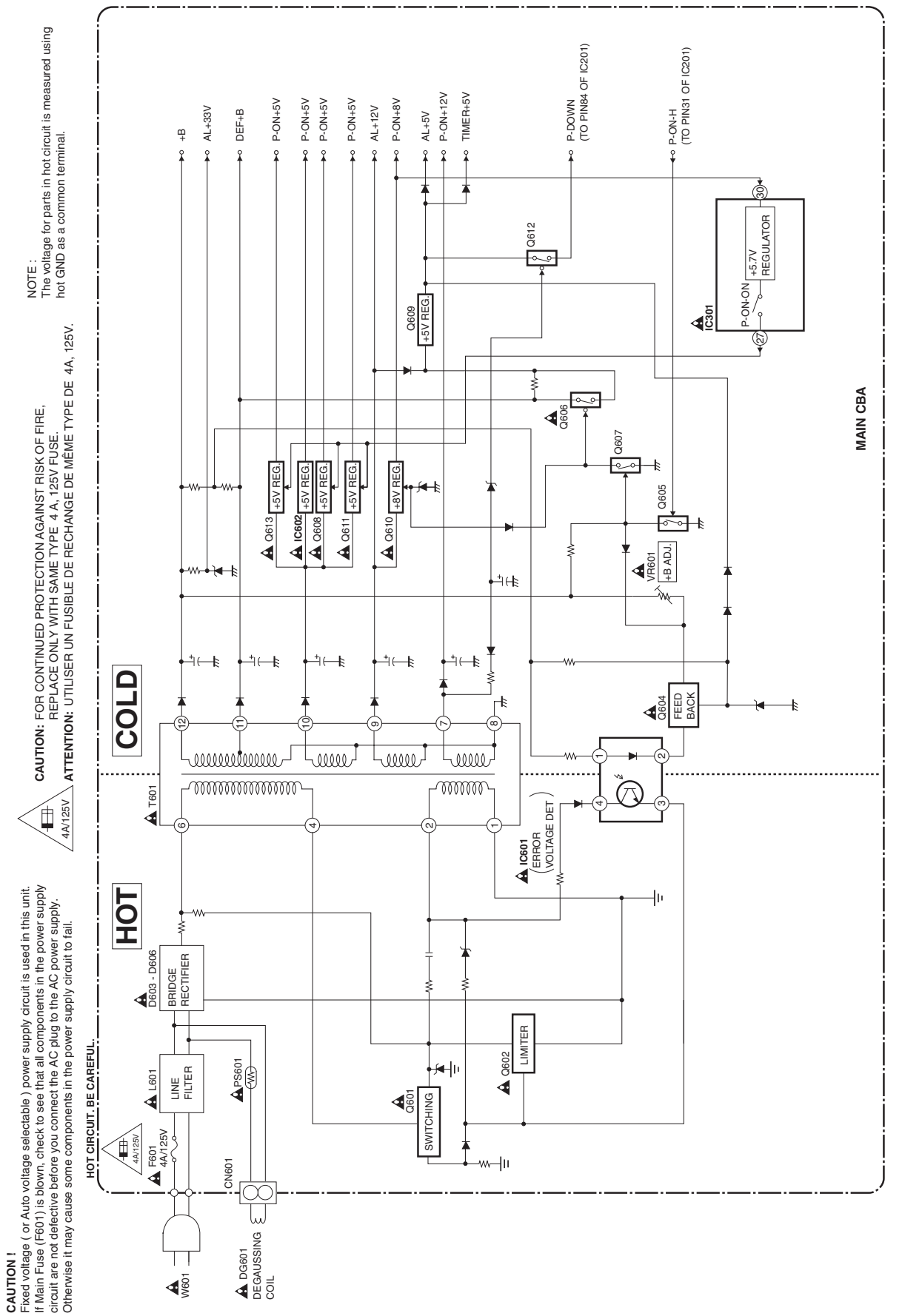
Chroma/Tuner Block Diagram



CRT/H.V. Block Diagram



Power Supply Block Diagram



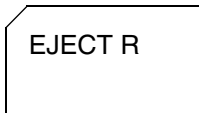
MECHANICAL TROUBLE INDICATOR

1, Each Malfunction Indication

If the MONITOR is turned ON right after the Mechanical Malfunction occurs or POWER SAFETY is turned ON, display the following character to show Malfunction after the EJECT display.

Immediately preceding Malfunction	Display character
REEL Malfunction	R
DRUM Malfunction	D
CASSETTE LOADING Malfunction	C
TAPE LOADING Malfunction	T
P-SAFETY 2	2
P-SAFETY 3	3
P-SAFETY 1	1

Example: If REEL Malfunction



2, Each Malfunction evaluation method

P-SAFETY 1 protect

If P-SAFETY 1 port becomes continuously 2.5V or more for 120 msec. (4 times 40 msec. interval), the unit shall immediately turn OFF the POWER/MONITOR and switch over to the Mechanical Malfunction mode with POWER OFF.

(To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

POWER SAFETY

1) POWER SAFETY 2

   If P-SAFETY 2 port becomes continuously 2.5V or less for 120 msec. (4 times 40 msec. interval) when P-ON-H port is ON, the unit shall be assumed to be the Power Malfunction 2 and immediately turn OFF the POWER/MONITOR and switch over the Mechanical Malfunction mode with POWER OFF.

   (Shall not unload)

   (To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

   * However the POWER SAFETY 2 function shall be disabled during 500 msec. right after the P-ON-H turns ON.

2) POWER SAFETY 3

   If P-SAFETY 3 port becomes continuously 2.5V or over for 120 msec. (4 times 40 msec. interval) when MONITOR is ON, P-SAFETY 3 function is available. After that, if P-SAFETY 3 port becomes continuously 2.5V or less for 120 msec. (4 times 40 msec. interval), the unit shall be assumed to be the Power Malfunction 3 and immediately turn OFF the POWER/MONITOR and switch over the Mechanical Malfunction mode with POWER OFF.

   (Shall not unload)

   (To return from this mode shall become possible only by POWER Key as in the case of the Mechanical Malfunction).

Mechanical Malfunction determination

1) REEL Malfunction detection

Countermeasure for REEL and CAPSTAN motor rotation malfunction (Except CASSETTE LOADING function)

After the Malfunction detection with REEL/CAPSTAN sensor, the unit shall switch over to STOP (B) and be REEL Mechanical Malfunction.

a) If the T-REEL pulse is not impressed after a lapse of 5 sec. at SP, 10 sec. at LP, 14 sec. at SLP, or more in the REEL Rotation Mode like PLAY/REC, FS/RS Mode, and the T-REEL or S-REEL pulse is not impress after a lapse of 4 sec. or more in REEL Rotation Mode of FF/REW, it shall be assumed to stop the rotation and switch over to STOP (B) position, then POWER be turned OFF and the unit be REEL Mechanical Malfunction. (T-REEL and S-REEL for the models on S-REEL and only T-REEL for other models)

b) If the C-FG pulse is not impressed for a lapse of 1 sec. or more during the CAPSTAN MOTOR rotation, it shall be MOTOR Rotation Malfunction (REEL Malfunction).

2) DRUM Malfunction detection

Detect the DRUM rotation at the D-FG input terminal.

If the variation of D-FG input level is not detected for a lapse of 1 sec. or more when D-CONT is "H", it shall be assumed to be Rotation Malfunction and be DRUM Malfunction.

When detect Drum Malfunction, POWER shall be turned OFF after the unit switches over to STOP (B) Mode.

3) Countermeasure for TAPE LOADING Malfunction

Detect the Malfunction with the LOADING Switch.

a) TAPE LOADING Malfunction

If LD-SW does not go to the established position after a lapse of 7 sec. or more from TAPE LOADING or TAPE UNLOADING start, the LOADING function shall immediately be stopped and POWER be turned OFF, and inform the Timer about the LOADING Mechanical Malfunction.

b) LD-SW Position Malfunction at each mode

When the unit operates at each mode, even if the LD-SW position changes from the established one in its mode, it keeps the function according to its mode.

4) Countermeasure for CASSETTE LOADING Malfunction

a) CASSETTE IN operating Malfunction

If LD-SW does not go to SB position after a lapse of 5 sec. or more from the CASSETTE insertion start, the unit starts the CASSETTE OUT operation.

After switch over to CASSETTE OUT operation and then a laps of 5 sec. or more from the CASSETTE OUT operation start, if LD-SW does not go to the EJ position or if START Sensor and END Sensor does not turn "ON" at the EJ position, the unit starts again to insert CASSETTE.

(However in S-INH state, the START/END Sensor shall be disabled).

b) CASSETTE OUT operating Malfunction

After a lapse of 5 sec. or more from CASSETTE OUT operation start, if LD-SW does not go to the EJ position or if START Sensor and END Sensor does not turn "ON" at the EJ position, the unit starts to insert CASSETTE.

(However in S-INH state, the START/END Sensor shall be disabled).

When the unit switches over to CASSETTE insertion at CASSETTE IN or CASSETTE OUT Malfunction, if LD-SW does not go to the SB position after a lapse of 5 sec. or more from CASSETTE insertion start, the function shall immediately be stopped and POWER be turned OFF, and the unit be CASSETTE LOADING Malfunction.

c) When POWER is turned ON, if the CL position or GC position cannot be detected after 5 sec. LD-REV operation and 5 sec. LD-FWD operation, the function shall immediately be stopped and POWER be turned OFF, and the unit be CASSETTE LOADING Malfunction.

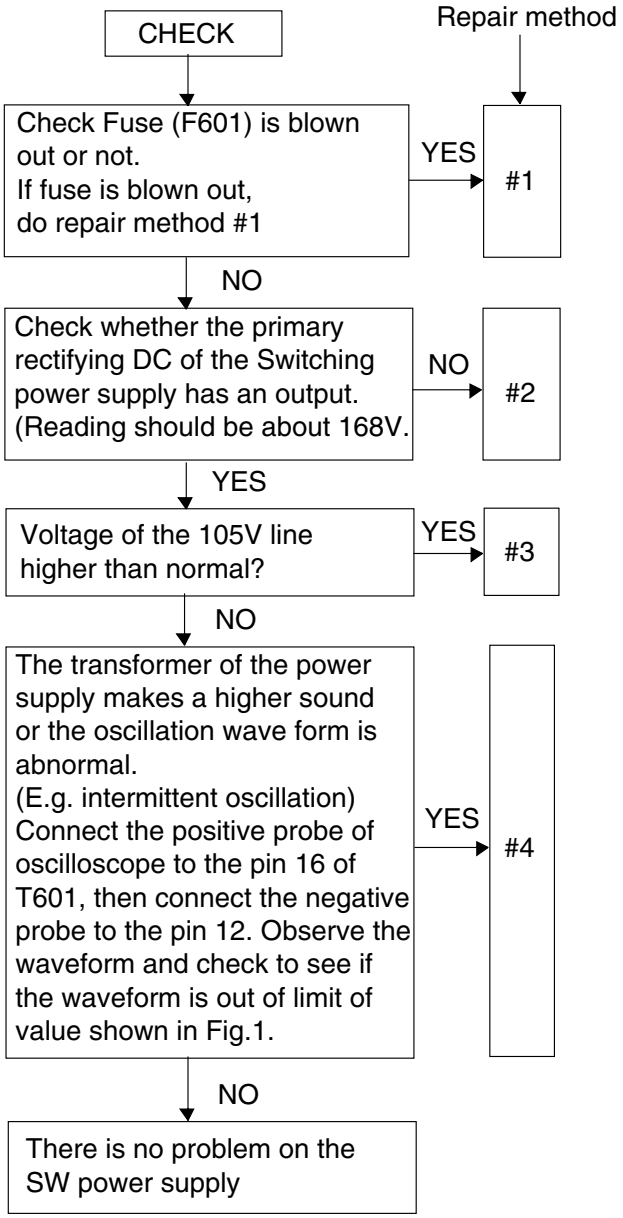
d) When POWER is turned ON without CASSETTE (EJ position) and LD-SW is monitored all the time, if the CL or GC position is detected continuously for 1 sec. or more, the POWER shall be turned OFF and the unit be CASSETTE LOADING Malfunction.

Countermeasure for Mechanical Malfunction

If the unit detects Mechanical Malfunction, turn the POWER OFF. If the unit is Mechanical Malfunction, Key input except POWER key shall be disabled and CASSETTE insertion disabled. When POWER Key is entered, the POWER is turned ON and the unit switches over the EJECT Mode. (Return with POWER ON)

Power Supply Trouble Shooting Guide

It is highly recommended that a variable isolation transformer which can monitor current be used. (Alternatively a variable AC source which monitors current will do). Read directions below before power is added!


CHECK
Repair method
Check Fuse (F601) is blown out or not.
If fuse is blown out, do repair method #1
YES
#1
NO
Check whether the primary rectifying DC of the Switching power supply has an output. (Reading should be about 168V.
NO
#2
YES
Voltage of the 105V line higher than normal?
YES
#3
NO
The transformer of the power supply makes a higher sound or the oscillation wave form is abnormal.
(E.g. intermittent oscillation)
Connect the positive probe of oscilloscope to the pin 16 of T601, then connect the negative probe to the pin 12. Observe the waveform and check to see if the waveform is out of limit of value shown in Fig.1.
YES
#4
NO
There is no problem on the SW power supply

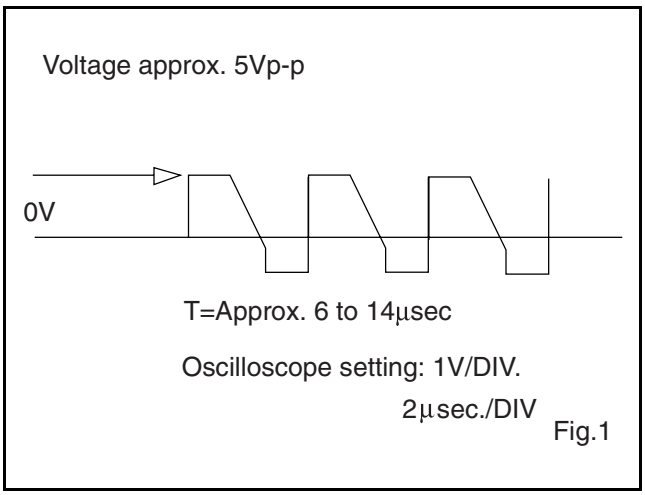


Fig.1

Repair method #1

(Power must be off)

Short circuit in the secondary side. check diode D613, D614, D616, D617 and D618, switching transistor (Q601), control transistor (Q602), diode and resistor replace as necessary.

Disconnect 105V diode (D613), 25V diode (D614), 8V diode (D616), 12V diode (D617), 12V diode (D618) and Check the load continuity of 105V line, 25V line, 8V line, 12V line through a tester (resistance range).

If the tester indicates a lower resistance value around 0 ohm, the line is short-circuited.

Before repairing the switching power supply, find out the short-circuited area of such line and repair it.

If the tester does not indicate any low resistance value (around 0 ohm), no load is short-circuited and there is no problem.

Check for any defective parts while the secondary rectifying diodes are disconnected (D613, D614, D616, D617 and D618) perform a diode check in both forward and reverse directions through a tester.

Repair method #2

Check the primary rectifying diodes (D603-D606) as possible problems. Remove the above mentioned parts and check them. Perform check according to the step 1 and 2 of repair method #1 and check for defects following parts, then if necessary replace with factory originals.

R602 is open or not.

Q601, Q602, D607, D608 and D611 are short or not.

Repair method #3

The feedback circuit which is monitored by the output of D613 105V may not work and this may be regarded as a possible cause, remove IC601 (Photo Coupler), diode (D620) and transistor (Q604) check for defects.

Repair method #4

Check control circuitly which is connecting to Pin 2 and 1 of Switching Transformer T601.

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Warning

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

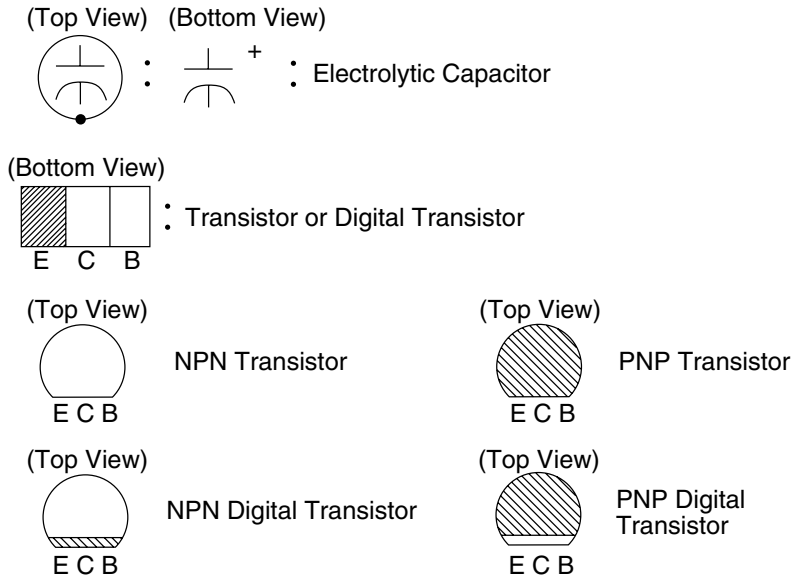
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.

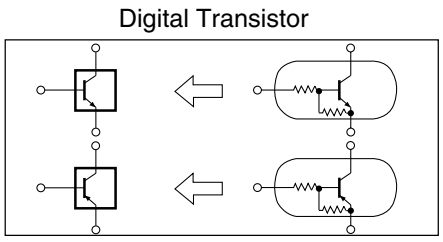
Note:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}\mu F$).
5. All voltages are DC voltages unless otherwise specified.

CBA Symbols



Schematic Diagram Symbols



LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. **CAUTION:** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE_A,_V FUSE.
   ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE_A,_V.

2. **CAUTION:**

   Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
   If Main Fuse (F601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. **Note:**

(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Wire Connectors

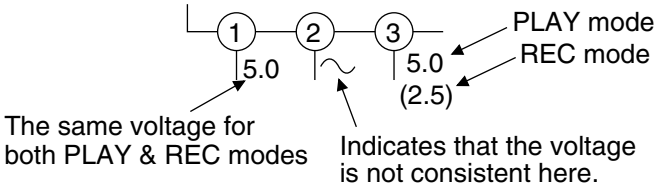
(1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).

(2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

5. Note: Mark "•" is a leadless (chip) component.

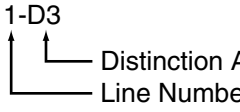
6. Mode: SP/REC

7. Voltage indications for PLAY and REC modes on the schematics are as shown below:

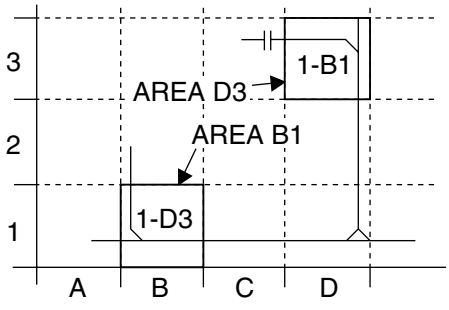


Unit: Volts

8. How to read converged lines



Examples:
1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



9. Test Point Information

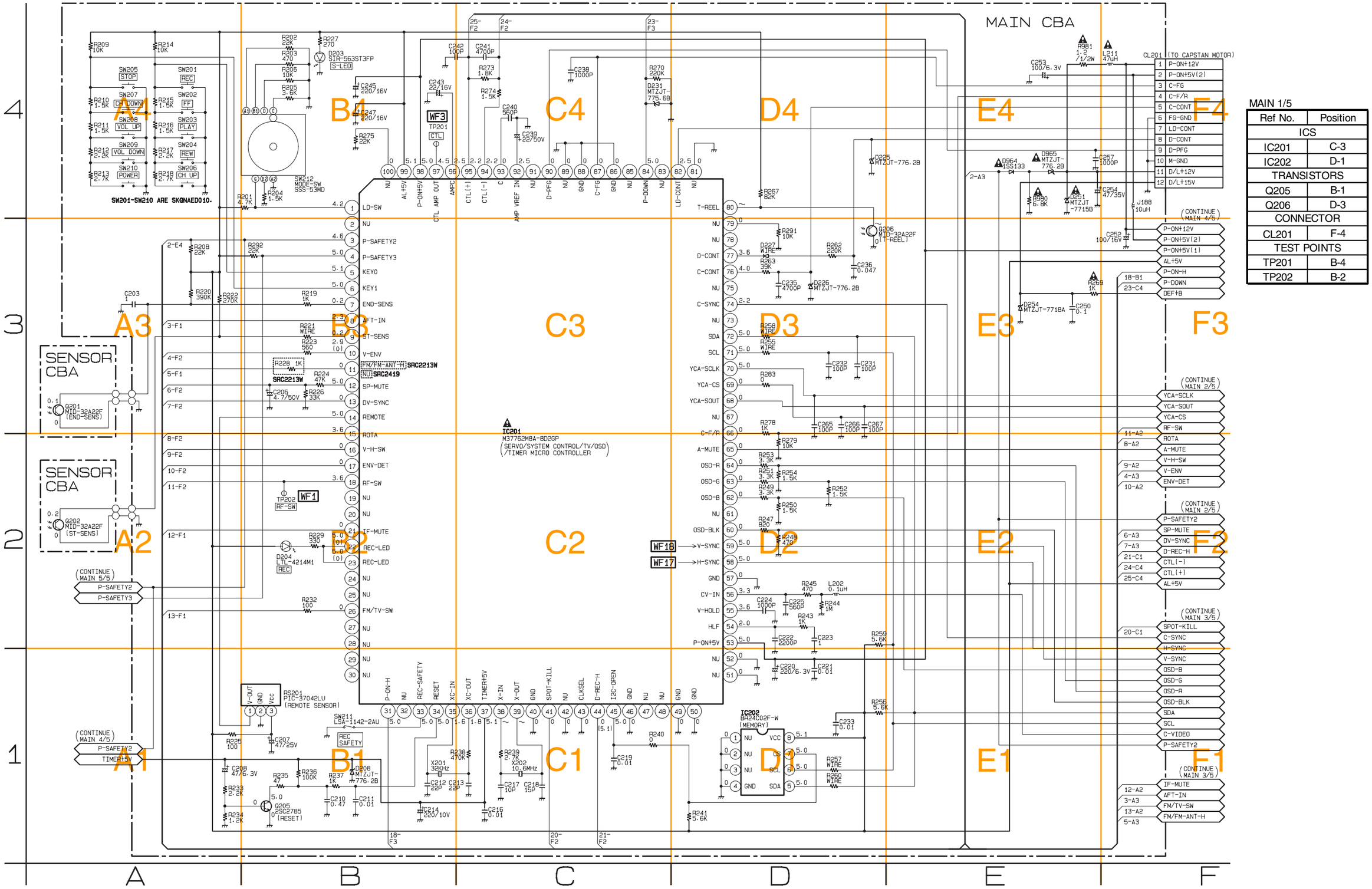
: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

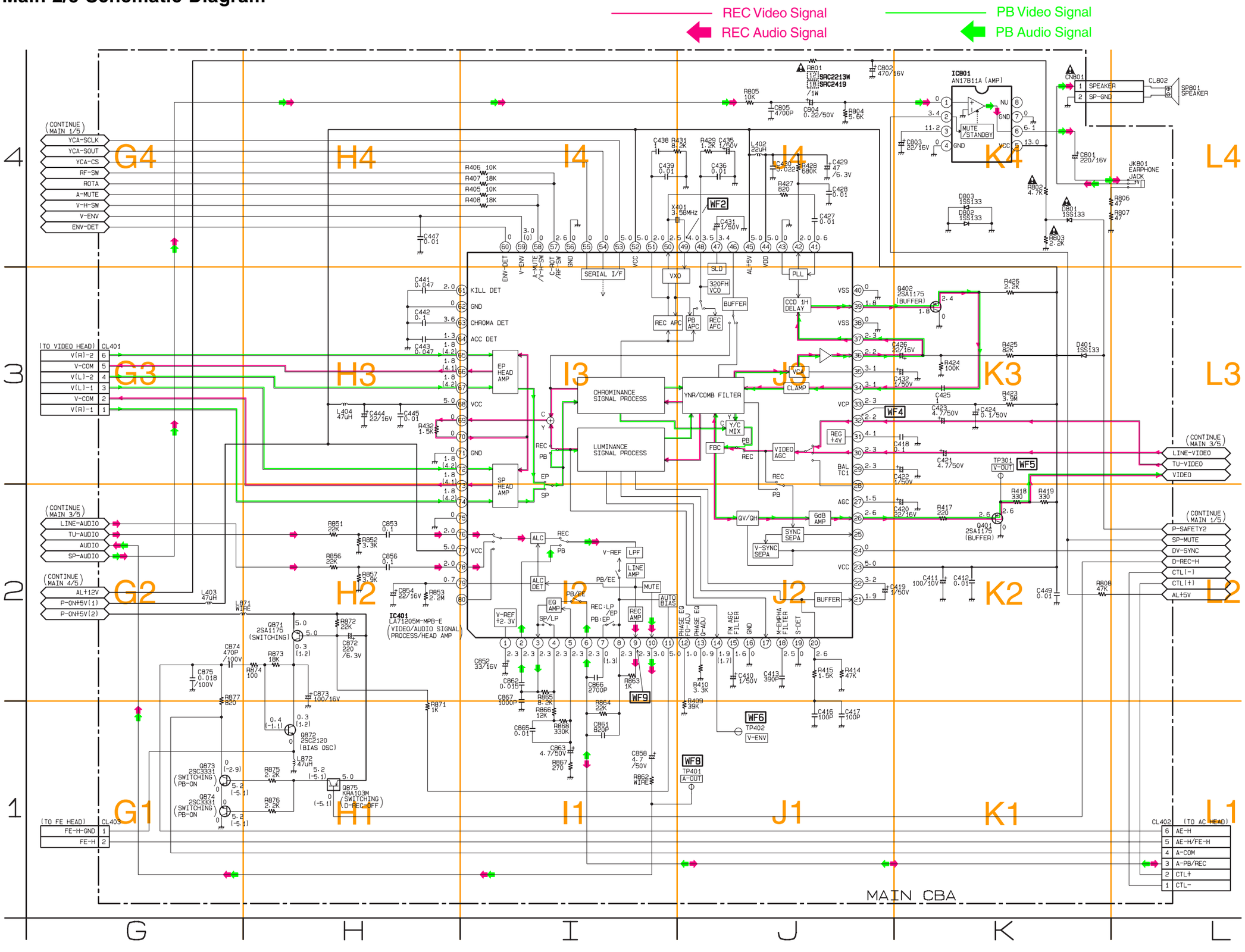
Main 1/5 Schematic Diagram



MAIN 1/5

Ref No.	Position
ICS	
IC201	C-3
IC202	D-1
TRANSISTORS	
Q205	B-1
Q206	D-3
CONNECTOR	
CL201	F-4
TEST POINTS	
TP201	B-4
TP202	B-2

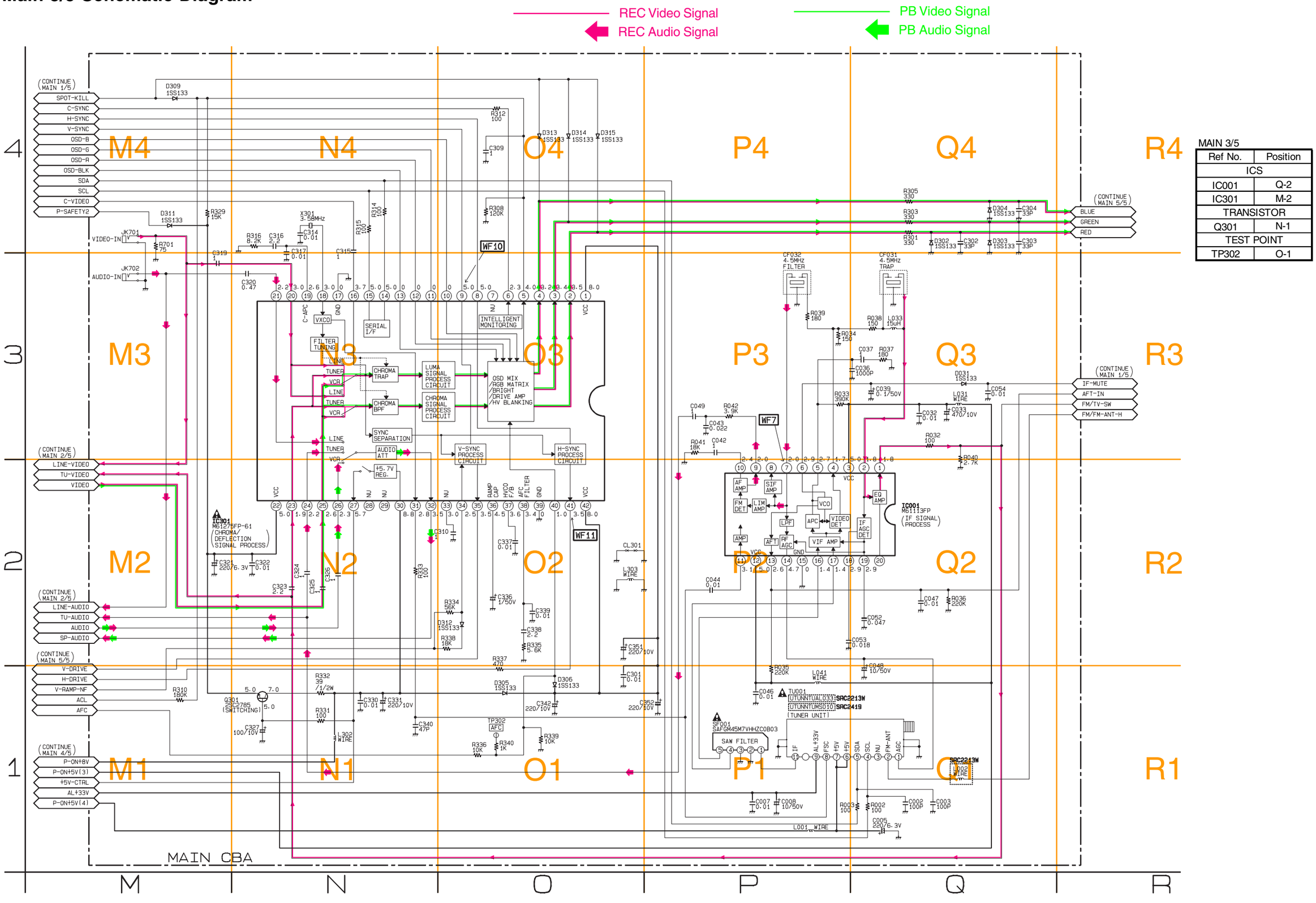
Main 2/5 Schematic Diagram



MAIN 2/5

Ref No.	Position
ICS	
IC401	H-2
IC801	K-4
TRANSISTORS	
Q401	K-2
Q402	K-3
Q871	H-2
Q872	H-1
Q873	G-1
Q874	G-1
Q875	H-1
CONNECTORS	
CL401	G-3
CL402	L-1
CL403	G-1
CN801	K-4
TEST POINTS	
TP301	K-2
TP401	J-1
TP402	J-1

Main 3/5 Schematic Diagram



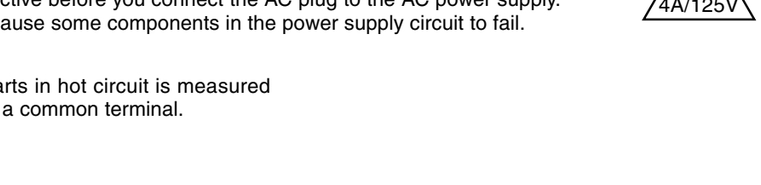
MAIN 3/5

Ref No.	Position
ICS	
IC001	Q-2
IC301	M-2
TRANSISTOR	
Q301	N-1
TEST POINT	
TP302	O-1

Main 4/5 Schematic Diagram

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



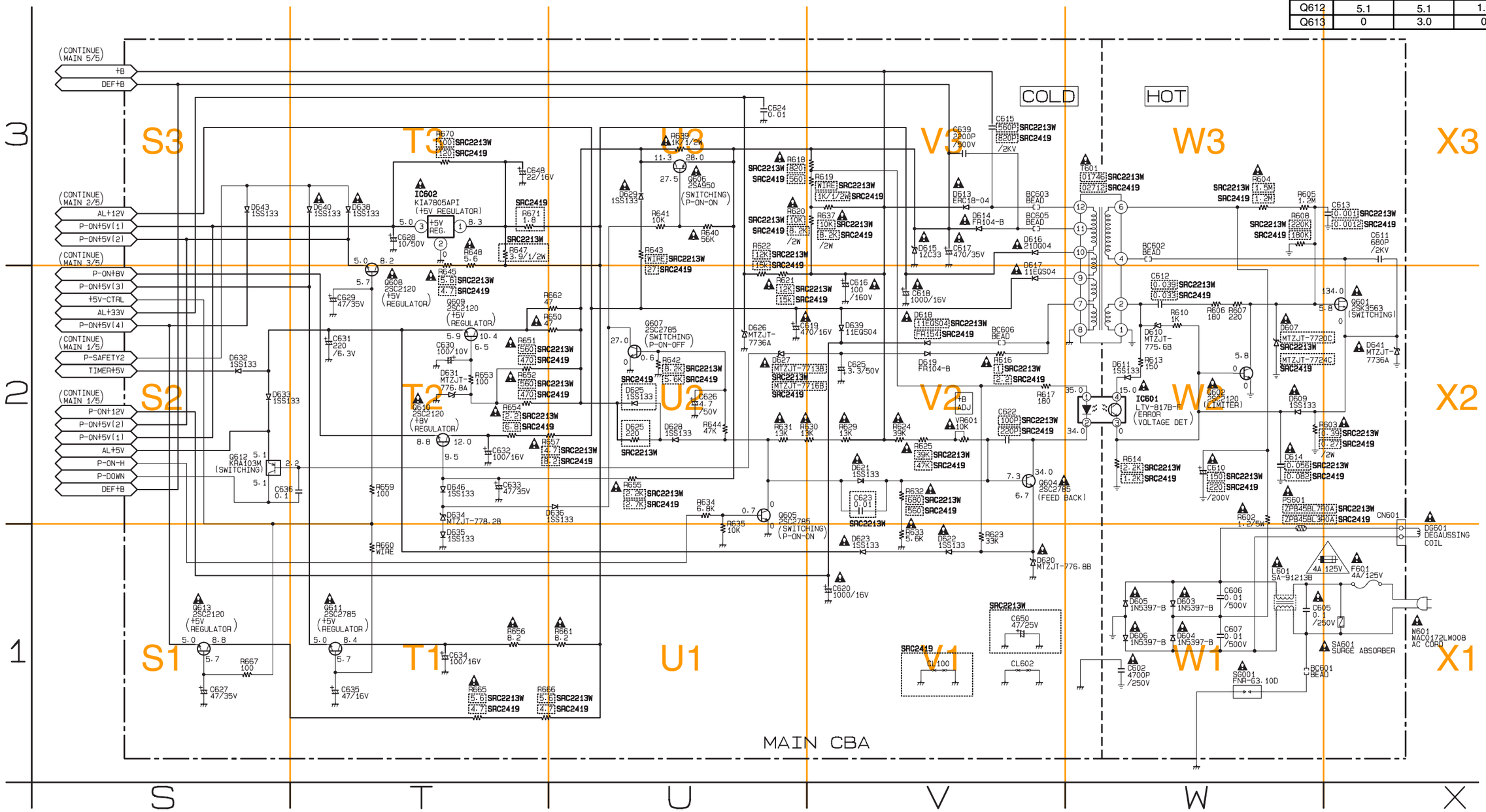
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

MAIN 4/5

Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC601	W-2	Q609	T-2
IC602	T-3	Q610	T-2
TRANSISTORS		Q611	T-1
Q601	X-2	Q612	S-2
Q602	W-2	Q613	S-1
Q604	V-2	CONNECTOR	
Q605	U-2	CN601	X-2
Q606	U-3	VARIABLE RESISTOR	
Q607	U-2	VR601	V-2
Q608	T-2		

VOLTAGE CHART (Power off mode)

Ref. No.	1	2	3	4
IC601	11.0	10.0	0	16.0
Ref. No.	1	2	3	
IC602	3.0	0	1.8	
Ref. No.	S	D	G	
Q601	0	137.0	1.8	
Ref. No.	E	C	B	
Q602	0	3.2	0	
Q604	6.7	9.9	7.8	
Q605	0	7.9	0	
Q606	8.9	8.8	8.2	
Q607	0	0	0.7	
Q608	0	3.0	0	
Q609	5.8	8.2	6.5	
Q610	0.9	5.6	1.4	
Q611	0.1	3.0	0	
Q612	5.1	5.1	1.9	
Q613	0	3.0	0	



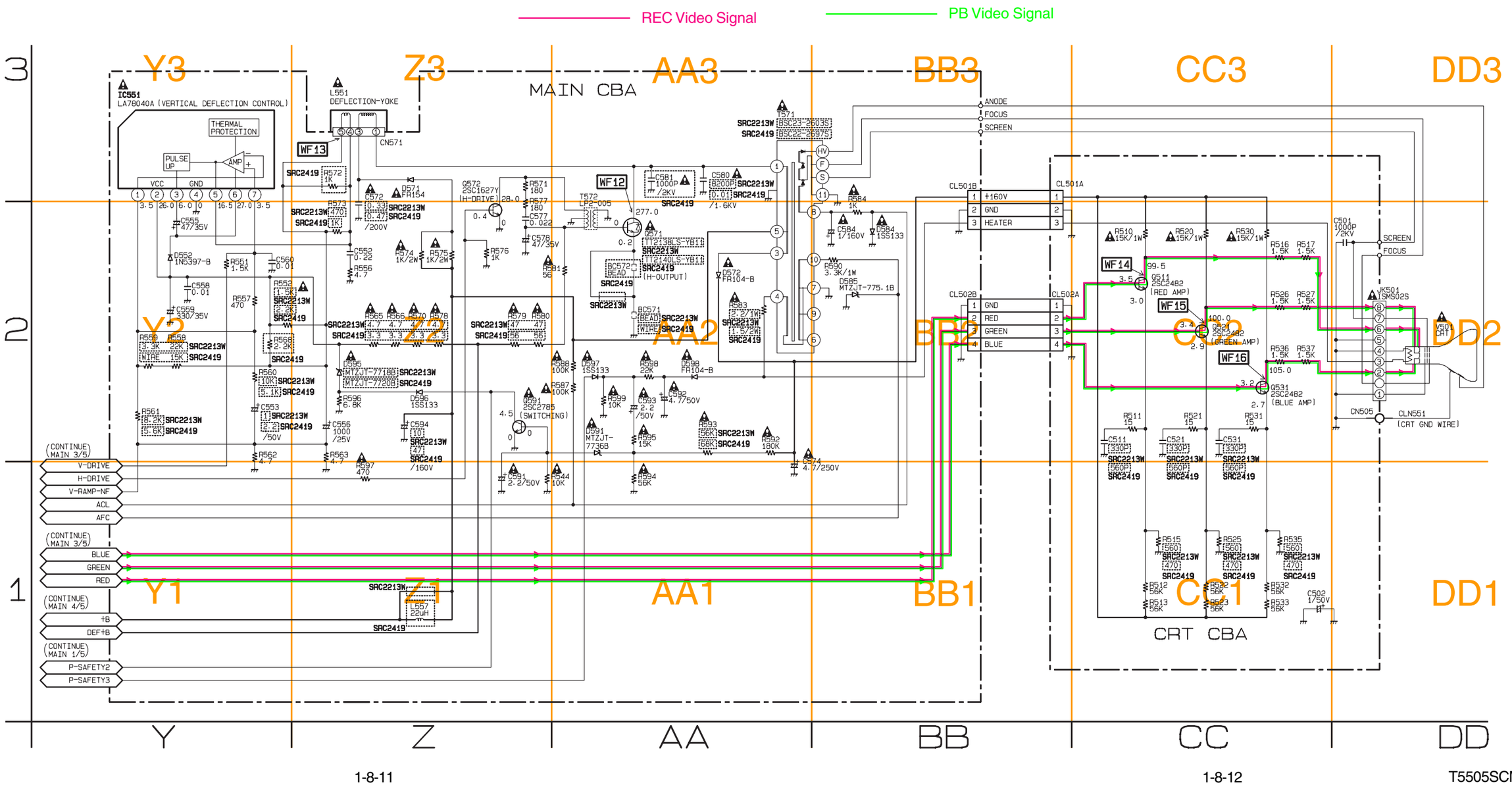
Main 5/5 & CRT Schematic Diagram

MAIN 5/5

Ref No.	Position
IC	
IC551	Y-3
TRANSISTORS	
Q571	AA-2
Q572	Z-3
Q591	Z-2
CONNECTORS	
CL501B	BB-3
CL502B	BB-2
CN571	Z-3

CRT

Ref No.	Position
TRANSISTORS	
Q511	CC-2
Q521	CC-2
Q531	CC-2
CONNECTORS	
CL501A	BB-3
CL502A	BB-2
CN505	DD-2

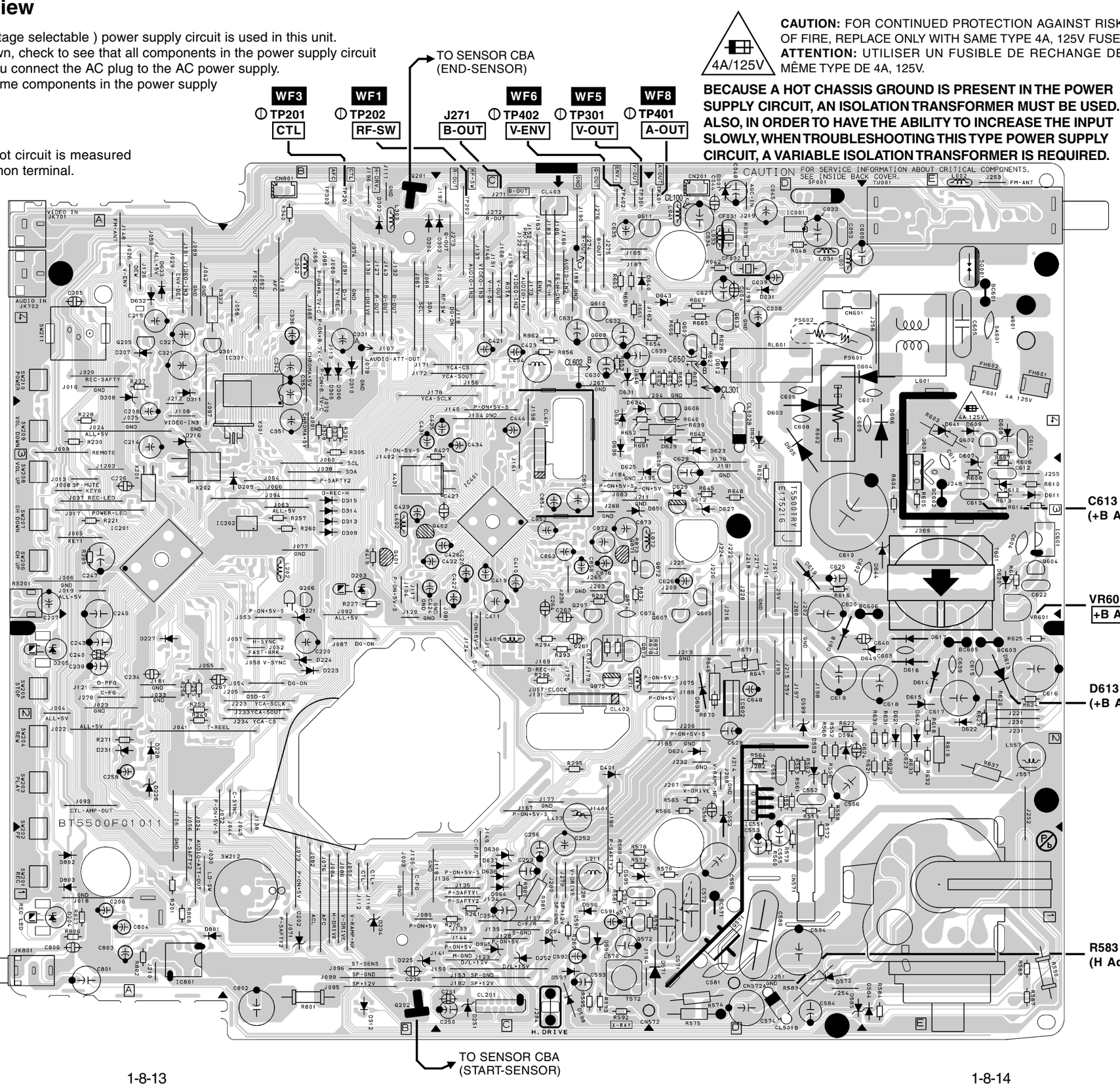


Main CBA Top View

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

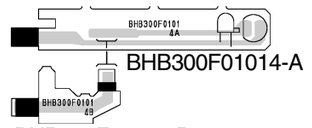
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

Sensor CBA Top View



MAIN CBA

Ref No.	Position
ICS	
IC001	D-4
IC201	A-3
IC202	B-3
IC301	B-4
IC401	C-3
IC551	D-2
IC601	E-3
IC602	D-2
IC801	A-1
TRANSISTORS	
Q205	A-4
Q206	B-3
Q301	A-4
Q401	B-3
Q402	B-3
Q571	D-1
Q572	C-1
Q591	C-1
Q601	E-3
Q602	E-3
Q604	E-3
Q605	D-3
Q606	D-3
Q607	D-2
Q608	D-3
Q609	C-4
Q610	C-4
Q611	C-4
Q612	D-3
Q613	D-4
Q871	C-3
Q872	D-3
Q873	C-2
Q874	C-3
Q875	C-2
CONNECTORS	
CL201	C-1
CL401	C-3
CL402	C-2
CL403	C-4
CL501B	D-1
CL502B	D-3
CN571	D-1
CN601	D-4
CN801	B-4
TEST POINTS	
TP201	B-4
TP202	C-4
TP301	C-4
TP302	B-4
TP401	D-4
TP402	C-4
VARIABLE RESISTOR	
VR601	E-2

Main CBA Bottom View

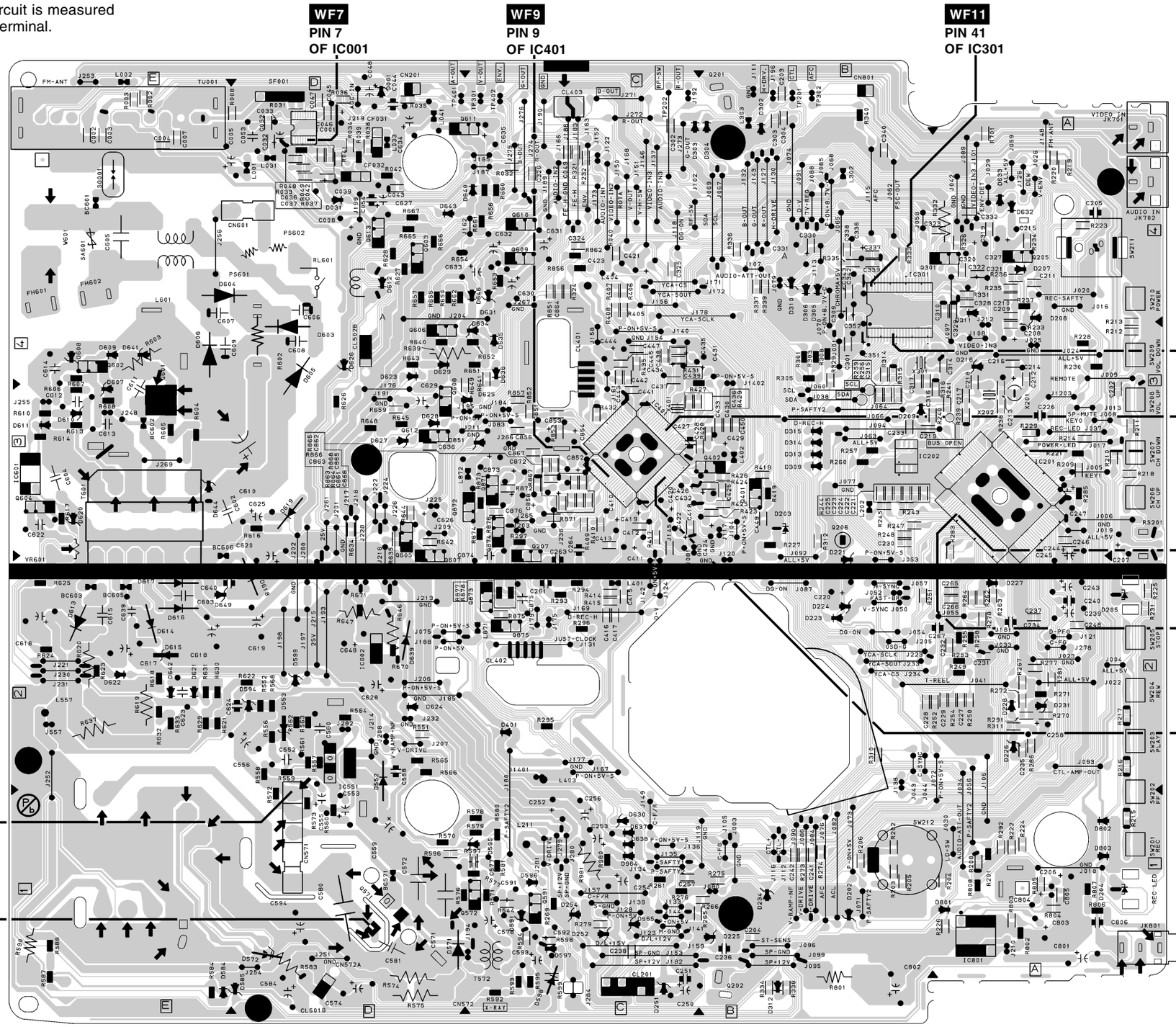
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

4A/125V

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

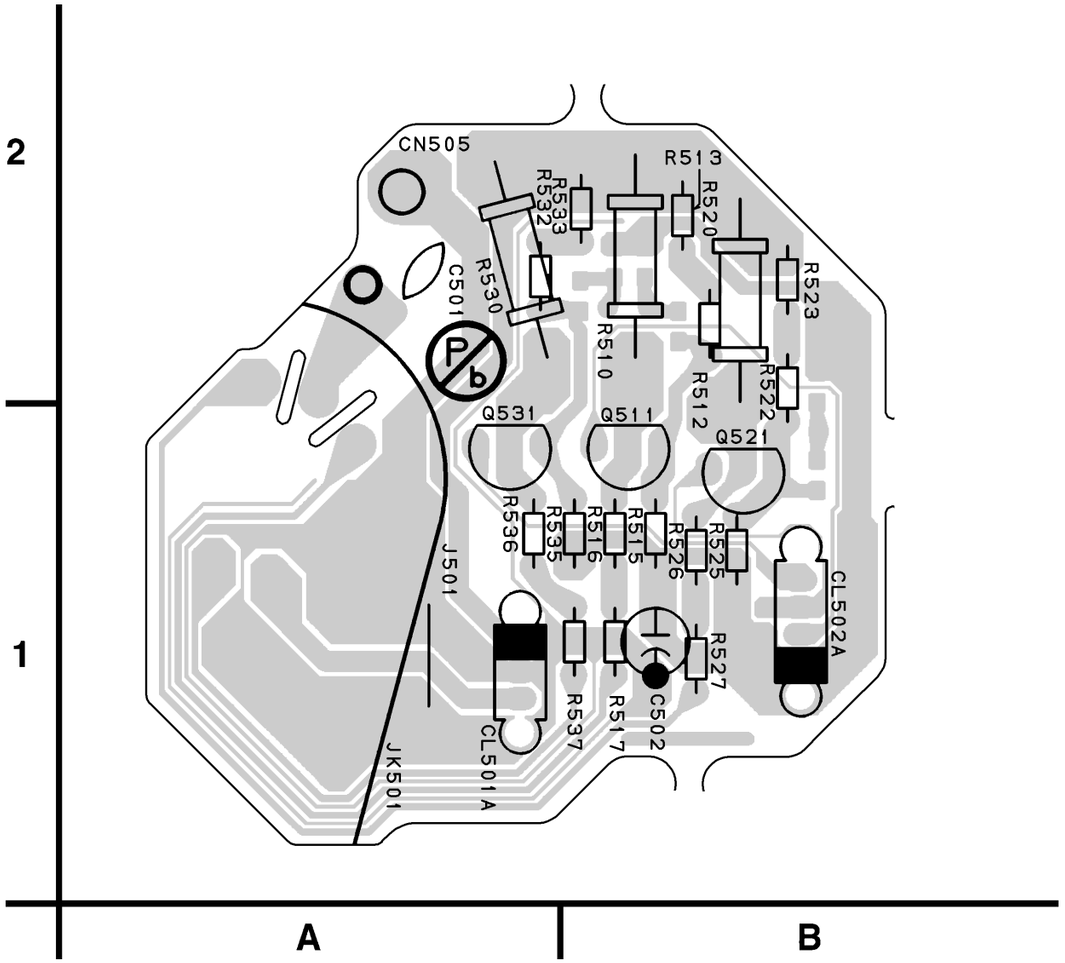
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.



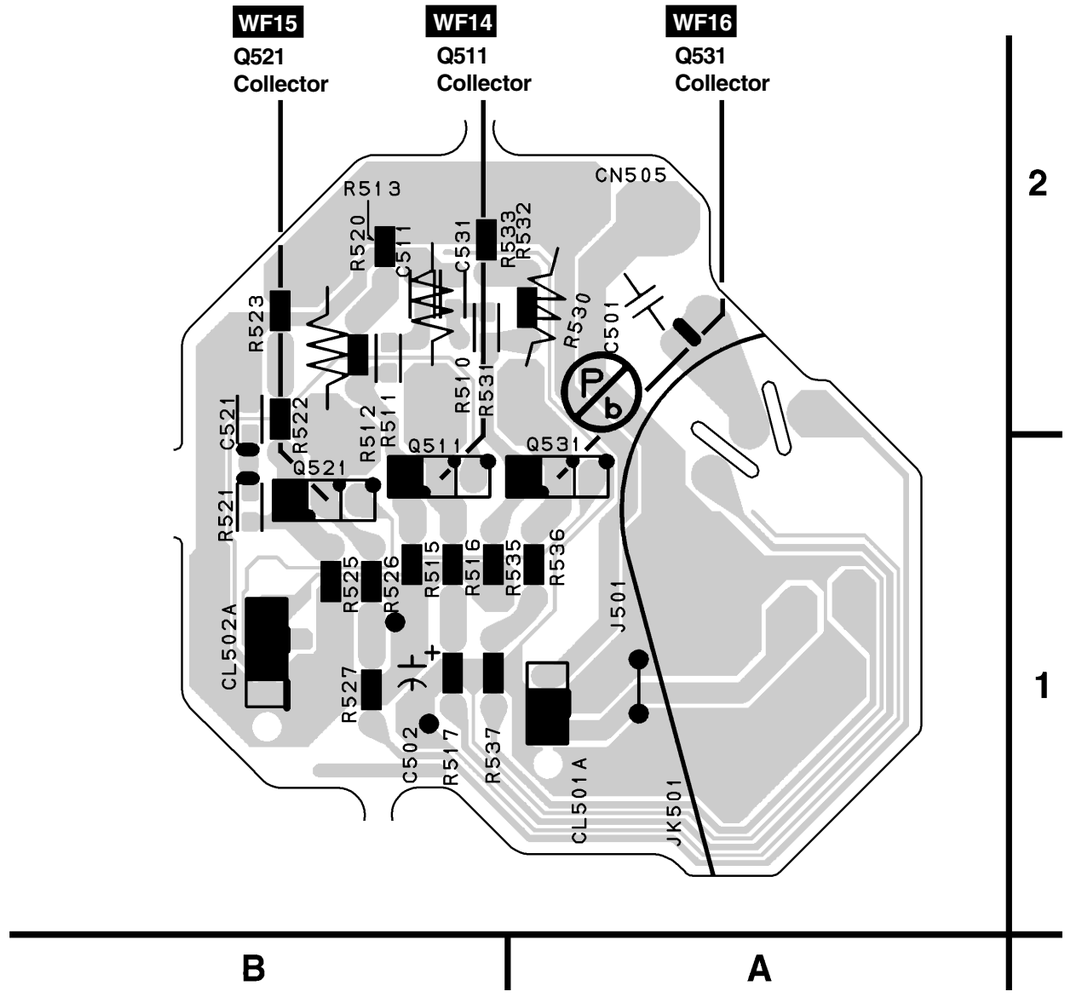
CRT CBA Top View

CRT CBA

Ref No.	Position
TRANSISTORS	
Q511	B-1
Q521	B-1
Q531	A-1
CONNECTORS	
CL501A	A-1
CL502A	B-1
CN505	B-2

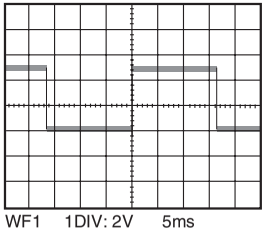


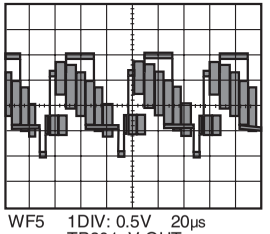
CRT CBA Bottom View

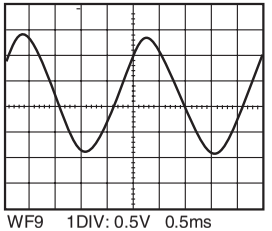


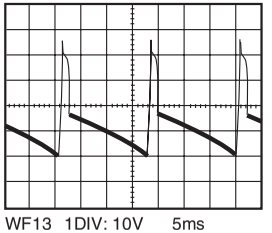
WAVEFORMS

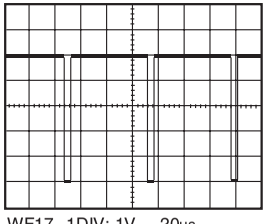
WAVEFORM NOTES
INPUT: NTSC COLOR BAR SIGNAL (WITH 1kHz AUDIO SIGNAL)
BRIGHTNESS, COLOR AND TINT CONTROLS: CENTER POSITION
CONTRAST CONTROL: APPROX 70%
VOLTAGES SHOWN ARE RANGE OF OSCILLOSCOPE SETTING.

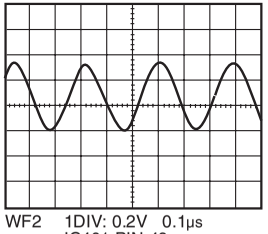

WF1 1DIV: 2V 5ms
TP202 RF-SW

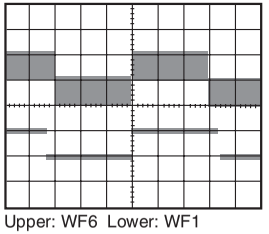

WF5 1DIV: 0.5V 20µs
TP301 V-OUT

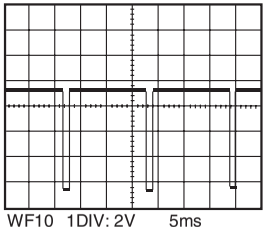

WF9 1DIV: 0.5V 0.5ms
IC401 PIN 9

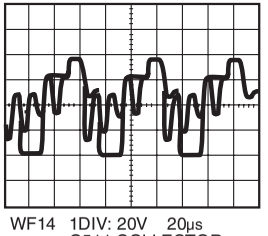

WF13 1DIV: 10V 5ms
CN571 PIN 5

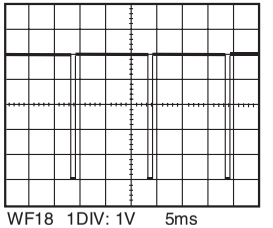

WF17 1DIV: 1V 20µs
IC201 PIN 58

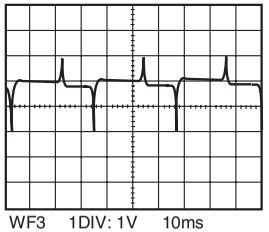

WF2 1DIV: 0.2V 0.1µs
IC401 PIN 49

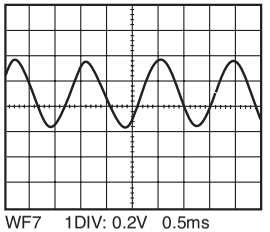

Upper: WF6 Lower: WF1
1DIV: 0.2V 2DIV: 5V 5ms
TP402 V-ENV

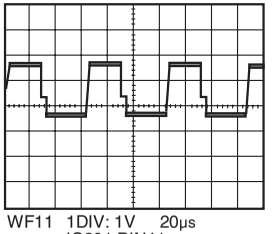

WF10 1DIV: 2V 5ms
IC301 PIN 9

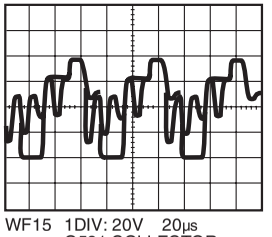

WF14 1DIV: 20V 20µs
Q511 COLLECTOR

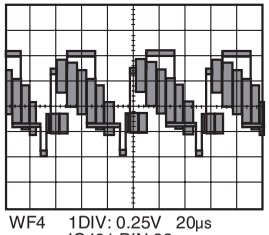

WF18 1DIV: 1V 5ms
IC201 PIN 59

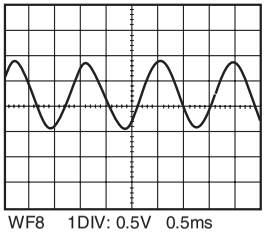

WF3 1DIV: 1V 10ms
TP201 CTL

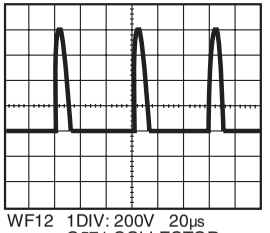

WF7 1DIV: 0.2V 0.5ms
IC001PIN 7

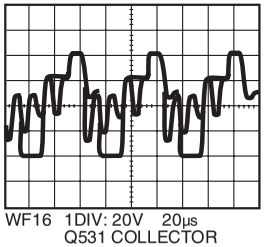

WF11 1DIV: 1V 20µs
IC301 PIN41


WF15 1DIV: 20V 20µs
Q521 COLLECTOR

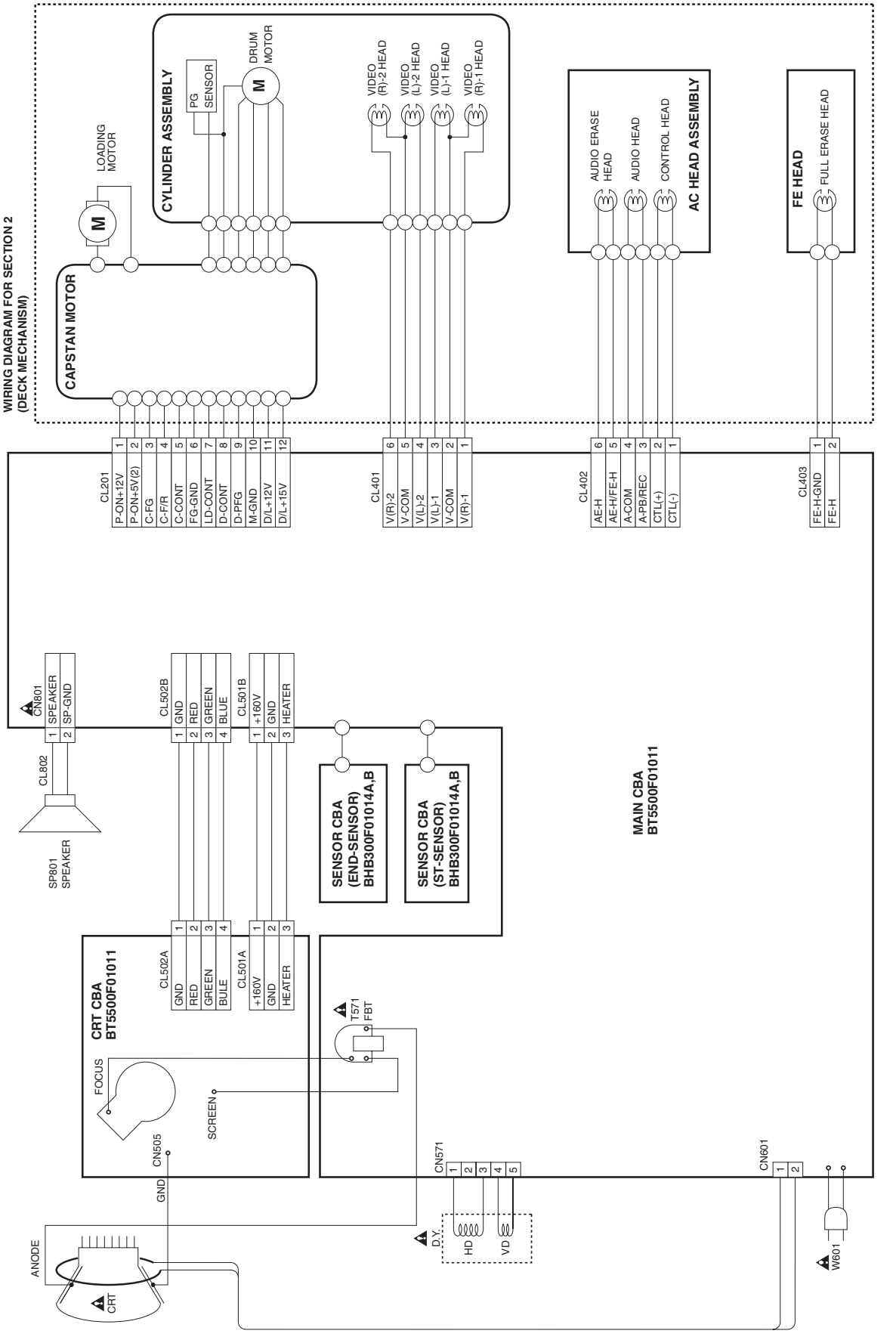

WF4 1DIV: 0.25V 20µs
IC401 PIN 32


WF8 1DIV: 0.5V 0.5ms
TP401 A-OUT


WF12 1DIV: 200V 20µs
Q571 COLLECTOR


WF16 1DIV: 20V 20µs
Q531 COLLECTOR

WIRING DIAGRAM



SYSTEM CONTROL TIMING CHARTS

Chart 1

1) SP MODE

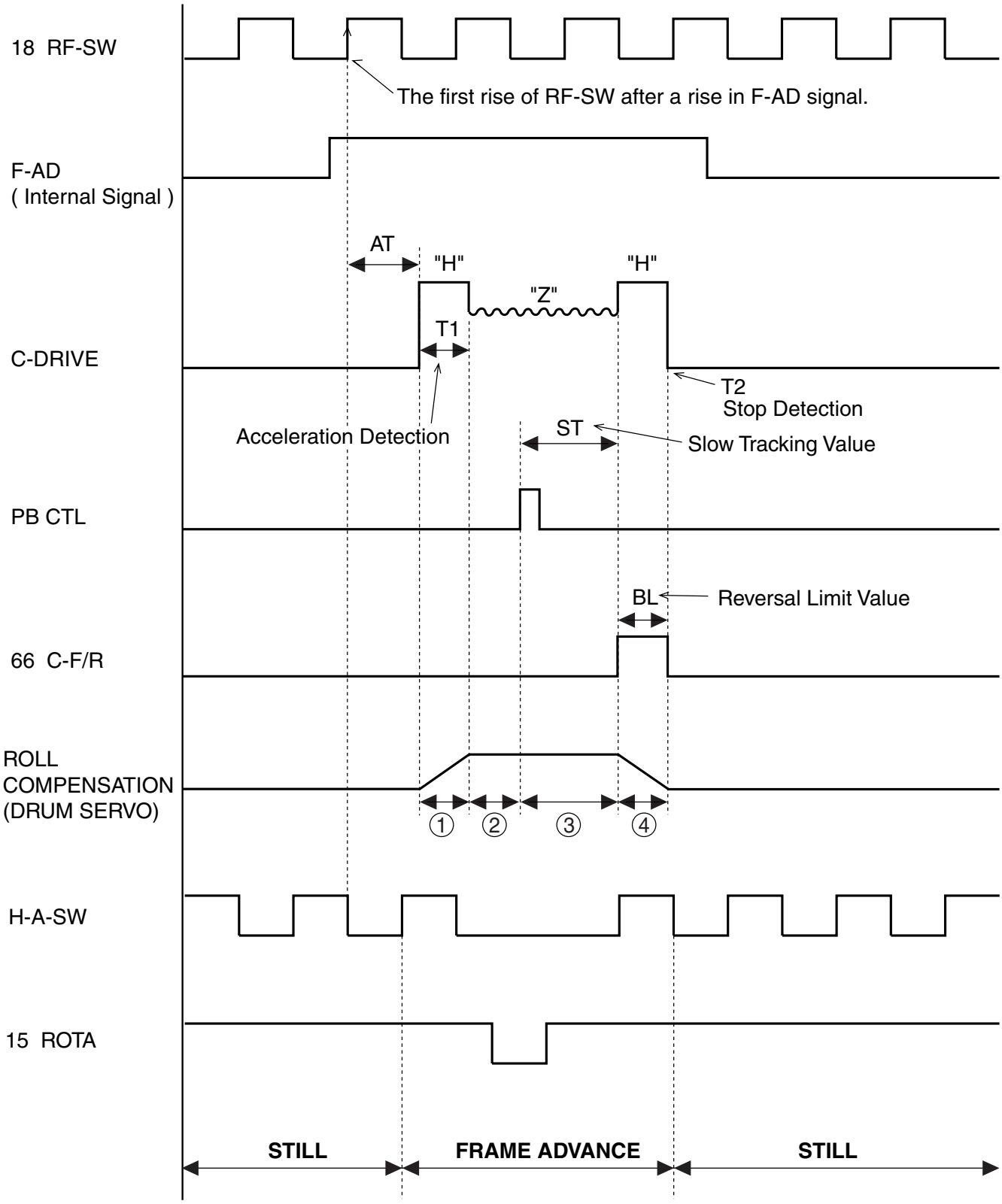


Chart 2

2) LP/EP MODE

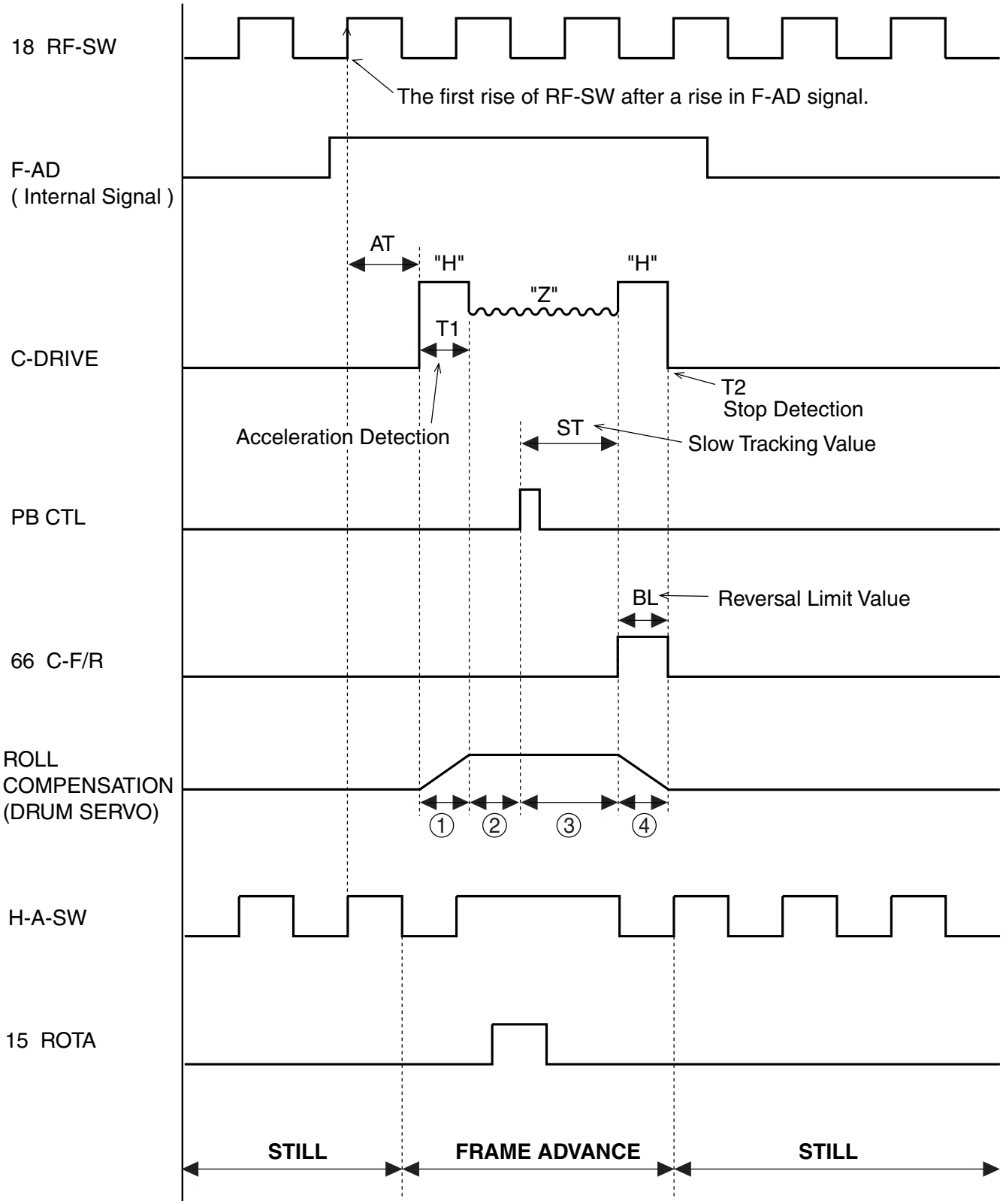


Chart 3

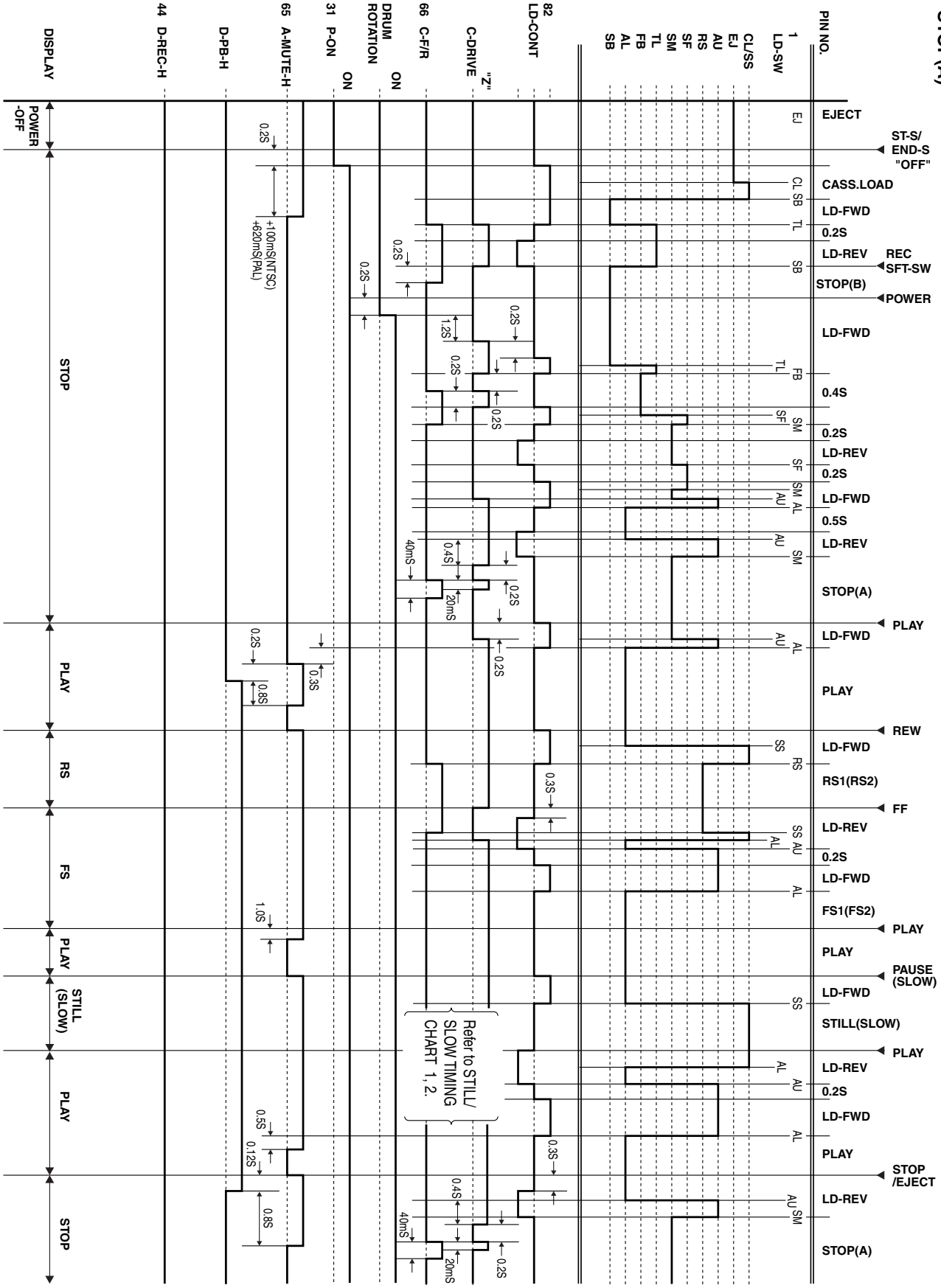
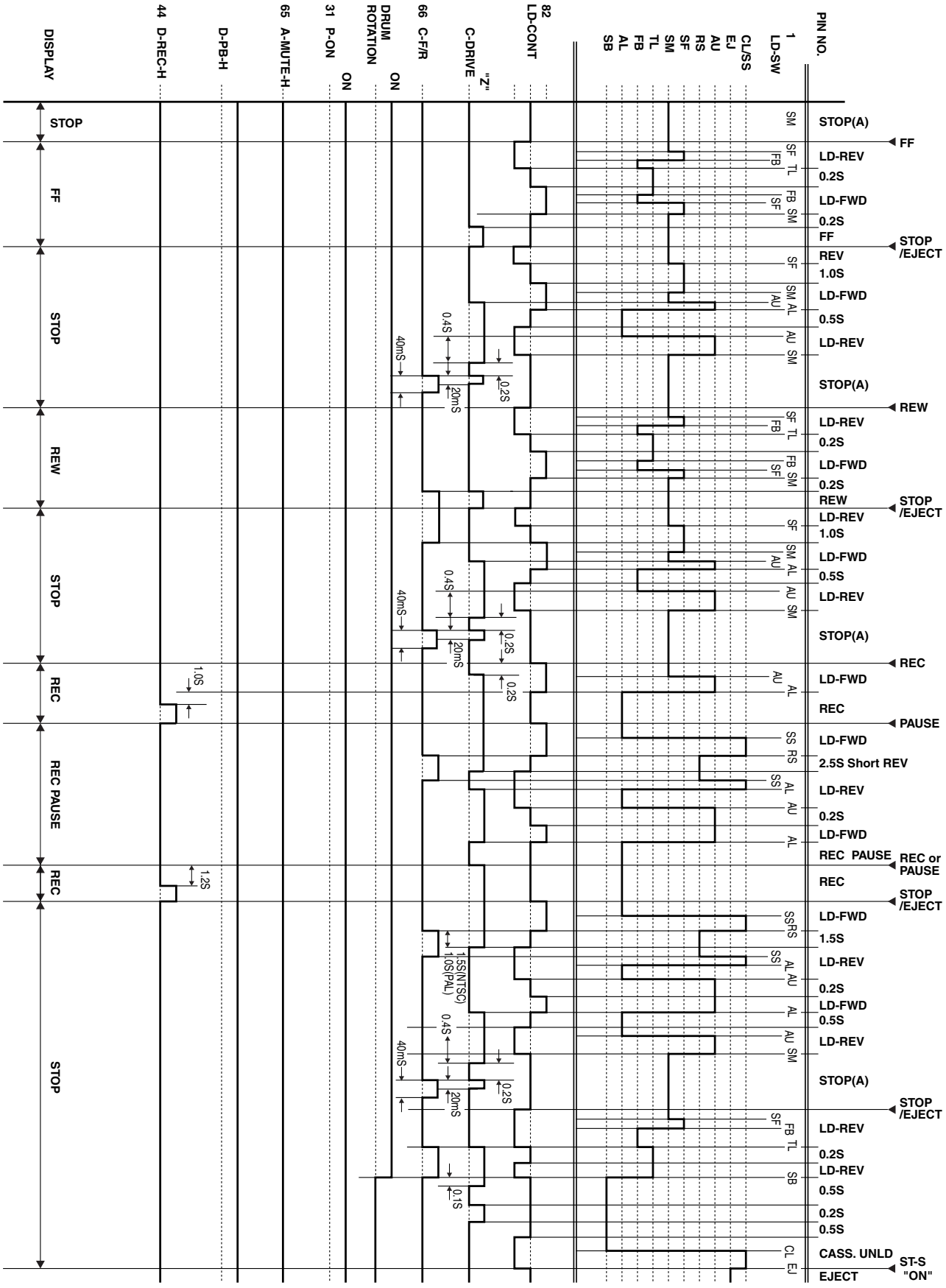

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL/SLOW -> PLAY -> STOP(A)
PIN NO.
1 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
82 LD-CONT
"Z" C-DRIVE
66 C-F/R
DRUM ROTATION
31 P-ON
65 A-MUTE-H
D-PB-H
44 D-REC-H
DISPLAY
POWER -OFF
EJECT
ST-S/ END-S "OFF"
CASS.LOAD
LD-FWD
0.2S
LD-REV
REC SFT-SW
STOP(B)
POWER
0.4S
0.5S
STOP(A)
PLAY
REW
RS1(RS2)
FF
FS1(FS2)
PAUSE (SLOW)
STILL(SLOW)
STOP /EJECT
STOP
PLAY
RS
FS
STILL (SLOW)
+100mS(NTSC) +620mS(PAL)
1.2S
40mS
20mS
0.3S
0.8S
1.0S
0.12S
Refer to STILL/ SLOW TIMING CHART 1, 2.

Chart 4


2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
1 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
82 LD-CONT
C-DRIVE
"Z"
66 C-F/R
DRUM ROTATION
31 P-ON
65 A-MUTE-H
D-PB-H
44 D-REC-H
DISPLAY
ON
STOP
FF
REW
REC
REC PAUSE
STOP(A)
LD-REV
0.2S
LD-FWD
1.0S
0.5S
2.5S Short REV
1.5S
0.1S
CASS. UNLD
EJECT
ST-S "ON"
0.4S
40mS
20mS
1.0S
1.2S
1.5S(NTSC)
1.0S(PAL)

IC PIN FUNCTION DESCRIPTIONS

Comparison Chart of Models and Marks

Model	Mark
SRC2213W	A
SRC2419	B

IC201 (TV/VCR Micro Controller)

"H" ≥ 4.5V, "L" ≤ 1.0V

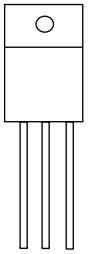
Pin No.	Mark	IN/ OUT	Signal Name	Function
1		IN	LD-SW	Loading Switch Input
2		-	NU	Not Used
3		IN	P-SAFETY 2	Power Supply Failure Detection 2
4		IN	P-SAFETY 3	Power Supply Failure Detection 3
5		IN	KEY0	Key 0 Input
6		IN	KEY1	Key 1 Input
7		IN	END-SENS	End-Sensor
8		IN	AFT-IN	AFT Input
9		IN	ST-SENS	Start-Sensor
10		IN	V-ENV	Video Envelope Input
11	A	IN	FM/FM-ANT-H	FM/FM Antenna
	B	-	NU	Not Used
12		OUT	SP-MUTE	Speaker Mute Output
13		OUT	DV-SYNC	Artificial V-Sync Output
14		IN	REMOTE	Remote Signal Input
15		OUT	ROTA	Color Phase Rotary Changeover SIgnal
16		-	V-H-SW	Video Head Switching Pulse
17		IN	ENV-DET	Envelope Comparator Signal
18		OUT	RF-SW	Video Head Switching Pulse
19		-	NU	Not Used
20		-	NU	Not Used
21		-	IF-MUTE	IF-MUTE Signal
22		OUT	REC-LED	Recording LED Control Signal
23		OUT	REC-LED	Recording LED Control Signal
24		-	NU	Not Used
25		-	NU	Not Used
26		-	FM/TV-SW	FM/TV-SW Signal
27		-	NU	Not Used
28		-	NU	Not Used
29		-	NU	Not Used
30		-	NU	Not Used
31		OUT	P-ON-H	Power On Signal at High
32		-	NU	Not Used
33		IN	REC-SAFETY	Record Protection Tab Detection
34		IN	RESET	System Reset Signal (Reset="L")
35		IN	XC-IN	Sub Clock 32 kHz
36		OUT	XC-OUT	Sub Clock 32 kHz
37		-	TIMER+5V	Vcc
38		IN	X-IN	Main Clock Input
39		OUT	X-OUT	Main Clock Output
40		-	GND	GND
41		OUT	SPOT-KILL	Counter-measure for Spot
42		-	NU	Not Used
43		IN	CLKSEL	Clock Select (GND)
44		OUT	D-REC-H	Delayed Record Signal
45		IN	I2C-OPEN	White Balance Adjust Mode Judgment
46		-	GND	GND
47		-	NU	Not Used
48		-	NU	Not Used
49		-	GND	OSD GND
50		-	GND	GND
51		-	NU	Not Used
52		-	NU	Not Used
53		-	P-ON+5V	OSD Vcc
54		-	HLF	HLF
55		IN	V-HOLD	VHOLD
56		IN	CV-IN	Video Signal Input
57		-	GND	GND

Pin No.	Mark	IN/ OUT	Signal Name	Function
58		IN	H-SYNC	H-SYNC Input
59		IN	V-SYNC	V-SYNC Input
60		OUT	OSD-BLK	Output for Picture Cut off
61		-	NU	Not Used
62		OUT	OSD-B	Blue Output
63		OUT	OSD-G	Green Output
64		OUT	OSD-R	Red Output
65		OUT	A-MUTE	Audio Mute Output
66		OUT	C-F/R	Capstan Motor FWD/ REV Control Signal
67		-	NU	Not Used
68		-	YCA-SOUT	YCA-SOUT Signal
69		-	YCA-CS	YCA-CS Signal
70		-	YCA-SCLK	YCA-SCLK Signal
71		OUT	SCL	E2PROM/CHROMA IC Tuner Communication Clock
72		IN/ OUT	SDA	E2PROM/CHROMA IC Tuner Communication Data
73		-	NU	Not Used
74		IN	C-SYNC	C-Sync Input
75		-	NU	Not Used
76		OUT	C-CONT	Capstan Motor Control Signal
77		OUT	D-CONT	Drum Motor Control Signal
78		-	NU	Not Used
79		-	NU	Not Used
80		IN	T-REEL	Take Up Reel Rotation Signal
81		-	NU	Not Used
82		OUT	LD-CONT	Loading Motor Control Signal
83		-	NU	Not Used
84		IN	P-DOWN	Power Voltage Down Detector Signal
85		-	NU	Not Used
86		-	GND	GND
87		IN	C-FG	Capstan Motor Rotation Detection Pulse

Pin No.	Mark	IN/ OUT	Signal Name	Function
88		-	GND	GND (AMP)
89		-	NU	Not Used
90		IN	D-PFG	Drum Motor Pulse Generator
91		-	NU	Not Used
92		OUT	AMP VREF IN	Standard Voltage Input
93		-	C	C
94		IN/ OUT	CTL (-)	CTL (-)
95		IN/ OUT	CTL (+)	CTL (+)
96		-	AMPC	AMPC
97		OUT	CTL AMP OUT	Control Amp Output
98		-	P-ON+5V	Power Supply for AMP
99		-	AL+5V	A/D, D/A Standard Voltage
100		-	NU	Not Used

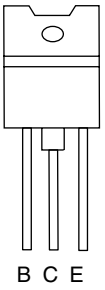
LEAD IDENTIFICATIONS

2SK3563



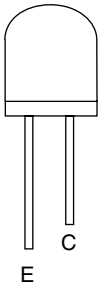
S: Souce
D: Drain
G: Gate

2SC5884000RF
TT2138LS-YB11
2SC5885000RF
TT2140LS-YB11



E: Emitter
C: Collector
B: Base

MID-32A22F
PT204-6B-12



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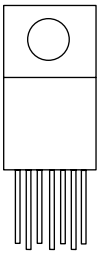

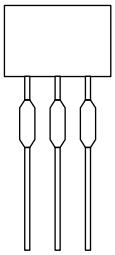

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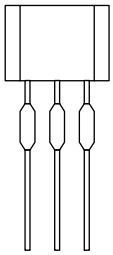
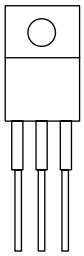
2SC2120-(O,Y)(TPE2)
2SC3331(T,U)
KRA103M
KTC3203(Y)



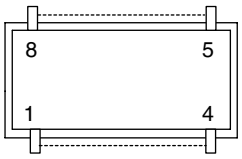
2SA1015-GR(TPE2)
2SA1175(F)
2SA950(O,Y)
2SC1627Y-TPE2
2SC2482 TPE6
2SC2785(F,H,J)
2SC3468(D,E)-AE
BN1F4M-T
KTA1267(GR)
KTA1271(Y)
KTC3199(GR)
KTC3207

LTV-817B-F
LTV-817C-F
PC817X6

KA7805A
KIA7805API



AN17811A



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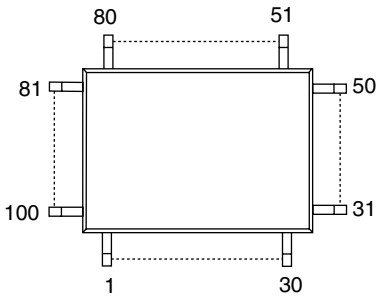
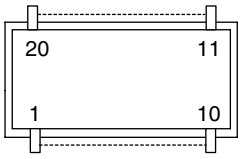
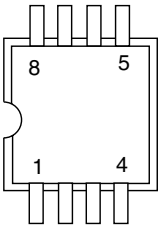


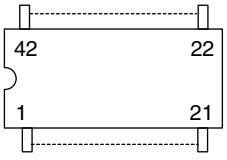
M61113FP



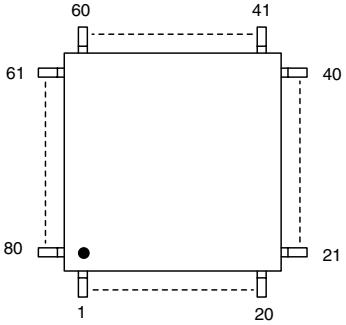
BR24C02F-W
BR24L02F-WE2
CAT24WC02JI
M24C02-WMN6



M61275FP-61



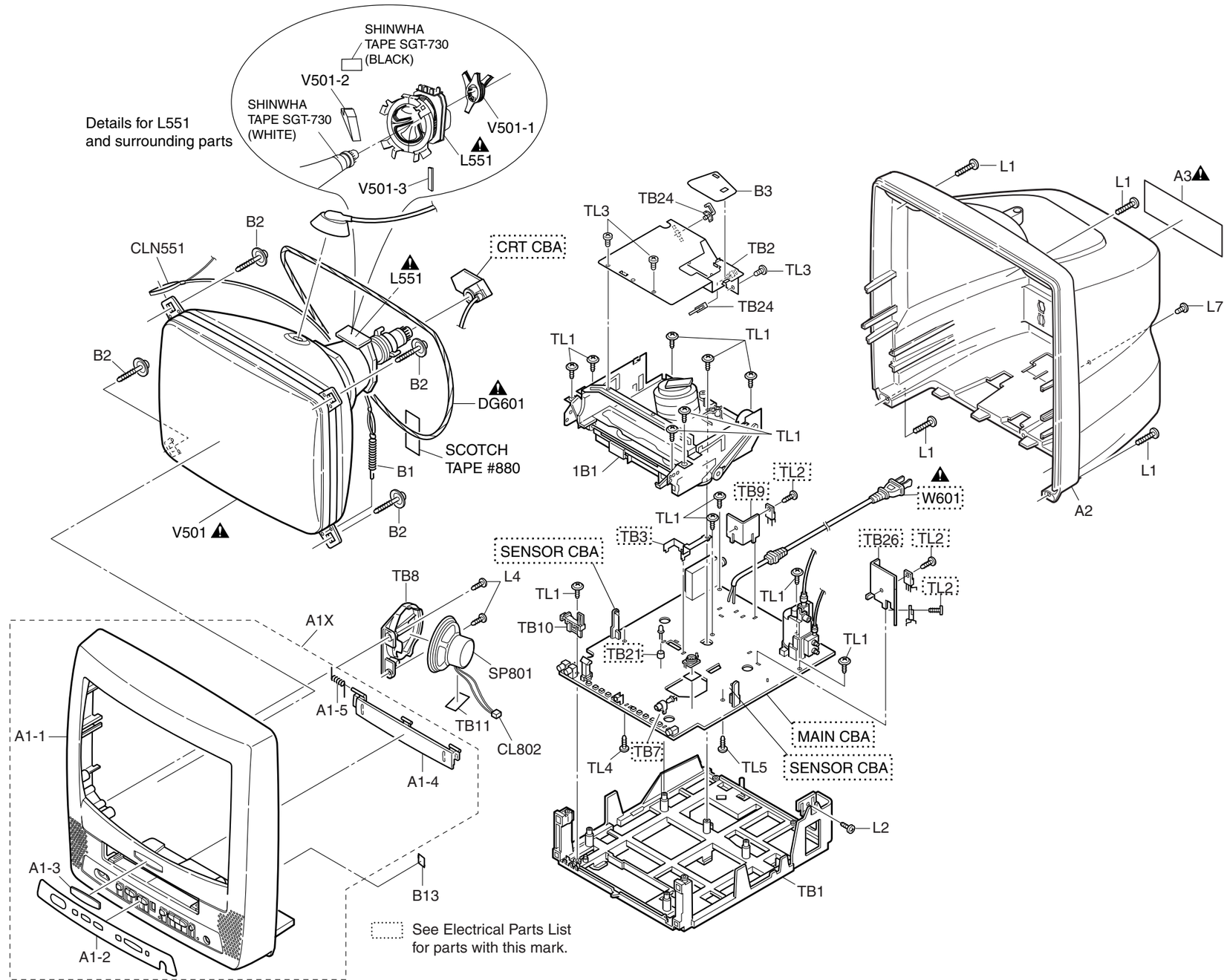
LA71205M-MPB-E



EXPLODED VIEWS

Cabinet

[SRC2213W]



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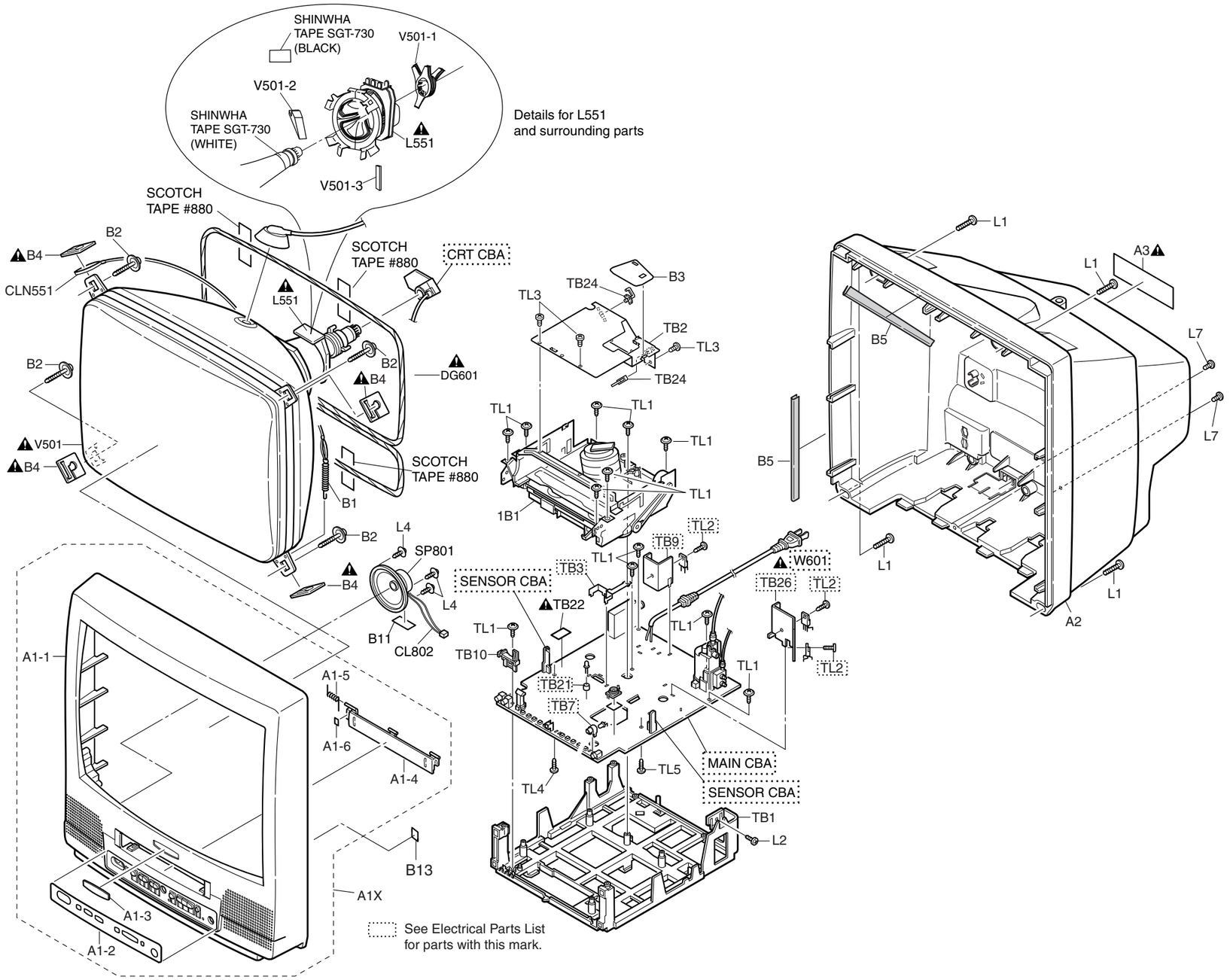
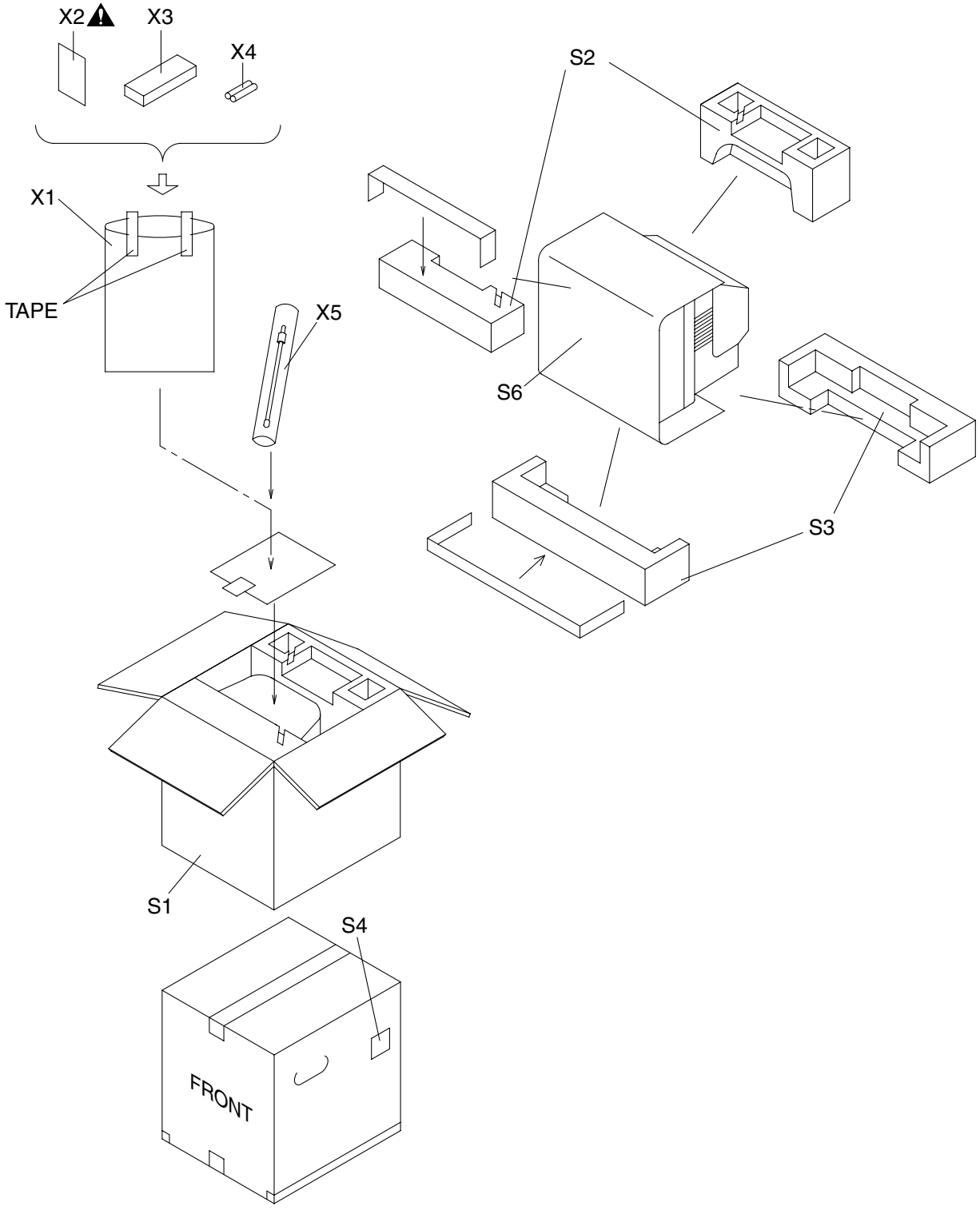
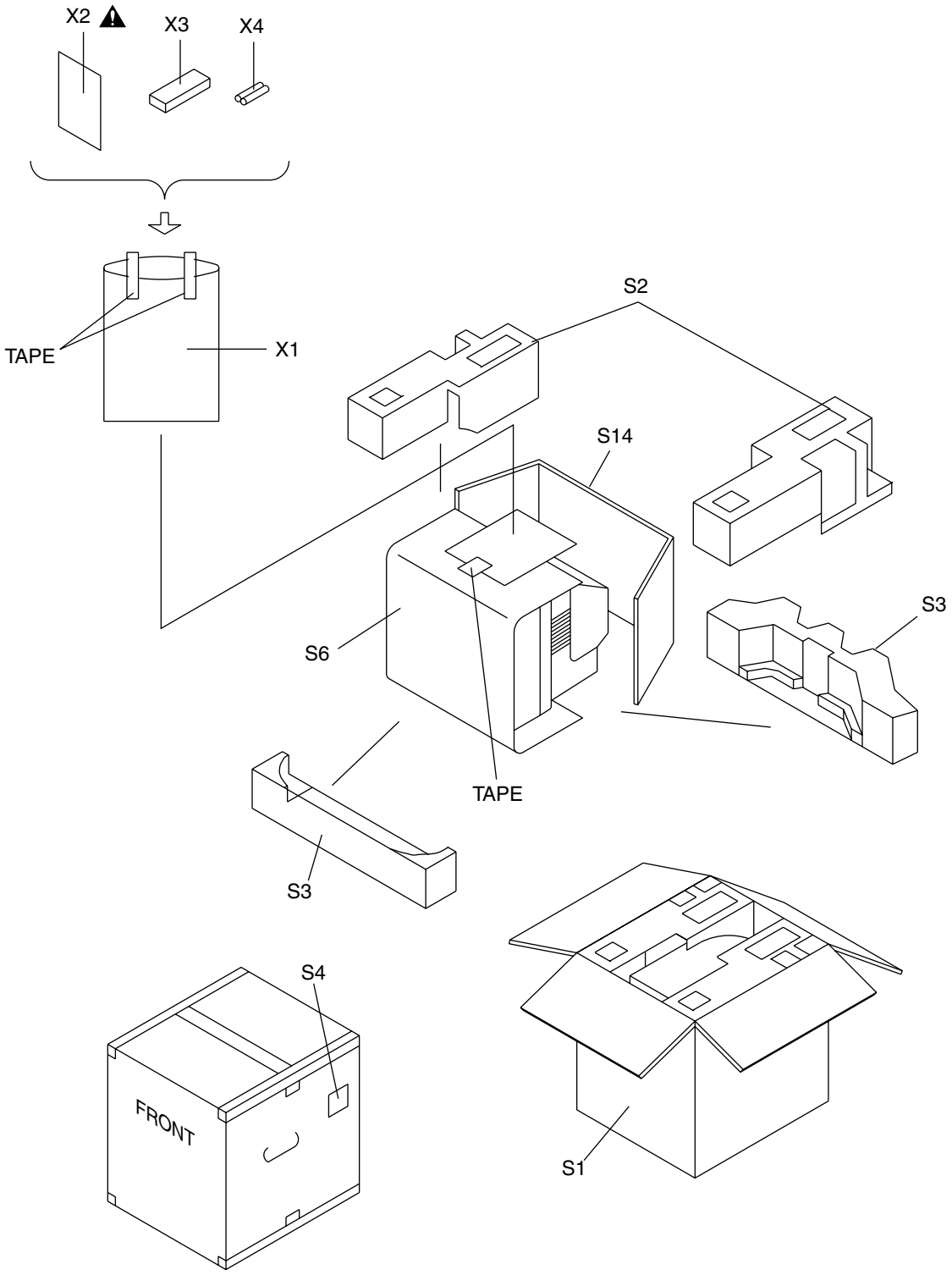

SHINWHA
TAPE SGT-730
(BLACK)
V501-1
V501-2
SHINWHA
TAPE SGT-730
(WHITE)
L551
V501-3
Details for L551
and surrounding parts
SCOTCH
TAPE #880
B2
B4
CLN551
L551
SCOTCH
TAPE #880
CRT CBA
B2
B2
B4
DG601
V501
B4
SCOTCH
TAPE #880
B1
B2
L4
SP801
B4
L4
B11
CL802
SENSOR CBA
TB22
TB10
TB21
TB7
TL1
TB24
B3
TL3
TB2
TL3
TB24
TL1
TL1
TL1
TL1
1B1
TB9
TL2
TL1
TB3
W601
TB26
TL2
TL2
TL1
TL1
TL2
TL5
MAIN CBA
SENSOR CBA
TL4
TB1
L2
L1
A3
L1
B5
L7
L7
B5
L1
L1
A2
A1-1
A1-5
A1-6
A1-4
B13
A1X
A1-3
A1-2
See Electrical Parts List
for parts with this mark.

Packing

[SRC2213W]



[SRC2419]



MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE:
Parts that are not assigned part numbers (---------) are not available.

[SRC2213W]

Ref. No.	Description	Part No.
A1X	FRONT CABINET ASSEMBLY T5505UF	0EM101465
A1-1	FRONT CABINET T5308UJ	0EM101181
A1-2	CONTROL PLATE T5505UF	0EM302046
A1-3	BRAND PLATE T5308UJ:SYLVANIA	0EM407194
A1-4	CASSETTE DOOR T5308UJ	0EM407195
A1-5	SPRING DOOR(Z10) T5200UA	0EM406687
A2	REAR CABINET T5435JF	0EM101300
A3⚠	RATING LABEL T5505UF	---------
1B1	DECK ASSEMBLY CZD013/VM2246	N2246FT
B1	SPRING TENSION B0080B0:EM40808	26WH006
B2	M5 CRT SCREW(B) B4000UA	0VM403923
B3	SHIELD PLATE T5500UA	0EM408707
B13	CLOTH(15X10XT0.5) L9700UA	0EM405038
CL802	WIRE ASSEMBLY 2P/150	WX1B5900-001
CLN551	CRT GND WIRE CRT GND	WX1L7720-001
DG601⚠	DEGAUSSING COIL F-019 or	LLBH00ZTM019
⚠	DEGAUSSING COIL AVDG016	LLBH00ZWR016
L1	SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L2	SCREW TAPPING M4X14	DBU14140
L4	SCREW, P-TIGHT 3X10 BIND HEAD	GBUP3100
L7	SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
SP801	SPEAKER S08F02B or	DSD0808XQ010
	SPEAKER J-F097-C5	DSD0808DCP01
TB1	TRAY CHASSIS T5400UA	0EM000688
TB2	TOP SHIELD T5500UA	0EM201787
TB8	SPEAKER HOLDER T5100UA	0EM201157B
TB10	RCA HOLDER T5400UA	0EM407677
TB11	CLOTH(10X30XT:0.3) T5300UA	0EM407441
TB24	WIRE HOLDER T5400UA	0EM407678
TL1	SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL3	SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
TL4	SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TL5	SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
PACKING		
S1	CARTON T5505UF	0EM409070
S2	STYROFOAM TOP ASSEMBLY T5400UA	0EM407693
S3	STYROFOAM BOTTOM ASSEMBLY T5400UA	0EM407694
S4	SERIAL NO. LABEL T5505UF	---------
S6	SET SHEET B5506UG:800X1500	0EM402369
ACCESSORIES		
X1	BAG POLYETHYLENE 235X365XT0.03	0EM408420
X2⚠	OWNERS MANUAL T5505UF	0EMN02407
X3	REMOTE CONTROL 512/ERC001/NE109UD	NE109UD
X4	DRY BATTERY R6P UM3 or	XB0M451GH001
	DRY BATTERY R6P(AR)2PX or	XB0M451HU002
	DRY BATTERY R6P(AR)2P X ICI or	XB0M451HU003
	DRY BATTERY(SUNRISE) R6SSE/2S or	XB0M451MS002
	DRY BATTERY R6P/2S	XB0M451T0001
X5	ROD ANTENNA T5200UA or	0EMN01755
	ROD ANTENNA L7720UA:NTSC W/COO or	0EMN00673
	ROD ANTENNA T5000UA	0EMN01599

Note:
1. V501 (CRT) HAS COUPLE OF SUBSTITUTIONAL PARTS AND EACH PARTS ALSO HAS MATCHING COMBINATION WITH L551.
PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION.
2. L551 (DEFLECTION YOKE) HAS MATCHING COMBINATION WITH V501.
PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION.

CRT TYPE A		
L551⚠	DEFLECTION YOKE LLBY00ZSY005 or	LLBY00ZSY005
⚠	DEFLECTION YOKE KDY3GDA82X	LLBY00ZMS011
V501⚠	CRT A34AGT13X	TCRT190CP036
V501-1	C.P.MAGNET JH225-FN-00	XM04000BV003
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001
CRT TYPE B		
L551⚠	DEFLECTION YOKE LLBY00ZSY002 or	LLBY00ZSY002
⚠	DEFLECTION YOKE KDY3GCE83X	LLBY00ZMS027
V501⚠	CRT A34JQQ093X	TCRT190MS010
V501-1	C.P.MAGNET JH225-FN-00	XM04000BV003
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001
CRT TYPE C		
L551⚠	DEFLECTION YOKE KDY3GCE83X or	LLBY00ZMS027
⚠	DEFLECTION YOKE LLBY00ZSY002 or	LLBY00ZSY002
⚠	DEFLECTION YOKE CDY-M1456S or	LLBY00ZQS008
⚠	DEFLECTION YOKE DSE1493FU(S)	LLBY00ZSM008
V501⚠	CRT A34KQW42X	TCRT190SM013
V501-1	C.P.MAGNET JH225-014 or	XM04000BV009
	CPM E-225-F01	XM04000ETC01
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001
CRT TYPE D		
L551⚠	DEFLECTION YOKE CDY-M1422F	LLBY00ZQS001
V501⚠	CRT A34JLL90X(W)	TCRT190QS015
V501-1	C.P.MAGNET JH225-FN-00	XM04000BV003
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001
CRT TYPE E		
L551⚠	DEFLECTION YOKE CDY-M1455F or	LLBY00ZQS007
⚠	DEFLECTION YOKE LLBY00ZSY003 or	LLBY00ZSY003
⚠	DEFLECTION YOKE KDY3GD592X	LLBY00ZMS004
V501⚠	CRT A34LRQ90X(VW)	TCRT190P7003
V501-1	C.P.MAGNET JH225-FN-00	XM04000BV003
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001
CRT TYPE F		
L551⚠	DEFLECTION YOKE LLBY00ZSY002 or	LLBY00ZSY002
⚠	DEFLECTION YOKE KDY3GCE83X or	LLBY00ZMS027

Ref. No.	Description	Part No.
⚠	DEFLECTION YOKE CDY-M1456S	LLBY00ZQS008
V501⚠	CRT A34KPU02XX	TCRT190GS016
V501-1	C.P.MAGNET JH225-FN-00	XM04000BV003
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001
	CRT TYPE G	
L551⚠	DEFLECTION YOKE LLBY00ZSY002 or	LLBY00ZSY002
⚠	DEFLECTION YOKE KDY3GCE83X or	LLBY00ZMS027
⚠	DEFLECTION YOKE CDY-M1456S	LLBY00ZQS008
V501⚠	CRT A34JXV70X	TCRT190THA02
V501-1	C.P.MAGNET JH225-FN-00	XM04000BV003
V501-2	WEDGE FT-00110W or	XV10000T4001
	WEDGE DB25SR	XV10000D9001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001

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Ref. No.	Mark	Description	Part No.
A1X		FRONT CABINET ASSEMBLY T7505UF	0EM101466
A1-1		FRONT CABINET T7505UF	0EM101434
A1-2		CONTROL PLATE T7505UF	0EM302047
A1-3		BRAND PLATE T5308UJ:SYLVANIA	0EM407194
A1-4		CASSETTE DOOR T5308UJ	0EM407195
A1-5		SPRING DOOR(Z10) T5200UA	0EM406687
A1-6		CLOTH(4X7XT0.7) T5000UA	0EM404974
A2		REAR CABINET T7410UL	0EM101299
A3⚠		RATING LABEL T7505UF	----------
1B1		DECK ASSEMBLY CZD013/VM2246	N2246FT
B1		SPRING TENSION B0080B0:EM40808	26WH006
B2		CRT MOUNTING SCREW B0030U1:K42419 or	8A00083
		M5 CRT SCREW TD805UF	0EM408333
B3		SHIELD PLATE T5500UA	0EM408707
B4⚠		DEGAUSS HOLDER T7100UA	0EM405476
B5		CLOTH 190X15XT0.5	TS7623
B11		CLOTH(10X30XT0.5) B5900UA	0EM404486
B13		CLOTH(15X10XT0.5) L9700UA	0EM405038
CL802		WIRE ASSEMBLY 2P/150	WX1B5900-001
CLN551⚠		CRT WIRE WX1T7000-005	WX1T7000-005
DG601⚠		DEGAUSSING COIL AVDG172	LLBH00ZWR049
L1		SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L2		SCREW TAPPING M4X14	DBU14140
L4		SCREW, ASSEMBLED 12:M3X12	0EM406746
L7		SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
SP801		SPEAKER S08F02B or	DSD0808XQ010
		SPEAKER J-F097-C5	DSD0808DCP01
TB1		TRAY CHASSIS T5400UA	0EM000688
TB2		TOP SHIELD T5500UA	0EM201787
TB10		RCA HOLDER T5400UA	0EM407677
TB22⚠		19V CHASSIS NO. LABEL TJ T7502UC	----------
TB24		WIRE HOLDER T5400UA	0EM407678
TL1		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL3		SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
TL4		SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TL5		SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
		PACKING	
S1		CARTON T7505UF	0EM409071
S2		STYROFOAM TOP ASSEMBLY T7400UA	0EM407699
S3		STYROFOAM BOTTOM ASSEMBLY T7400UA	0EM407700
S4		SERIAL NO. LABEL T7505UF	----------
S6		SET SHEET B7500UA:1000X1700	0EM402178
S14		TVCR HOLD PAD T7300UA	0EM406849
		ACCESSORIES	
X1		BAG POLYETHYLENE 235X365XT0.03	0EM408420
X2⚠		OWNERS MANUAL T5505UF	0EMN02407
X3		REMOTE CONTROL 512/ERC001/ NE138UD	NE138UD
X4		DRY BATTERY R6P UM3 or	XB0M451GH001
		DRY BATTERY R6P(AR)2PX or	XB0M451HU002
		DRY BATTERY R6P(AR)2P X ICI or	XB0M451HU003
		DRY BATTERY(SUNRISE) R6SSE/2S or	XB0M451MS002
		DRY BATTERY R6P/2S	XB0M451T0001
Note: 1. V501 (CRT) HAS COUPLE OF SUBSTITUTIONAL PARTS AND EACH PARTS ALSO HAS MATCHING COMBINATION WITH L551. PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION. 2. L551 (DEFLECTION YOKE) HAS MATCHING COMBINATION WITH V501. PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION.			
		CRT TYPE A	
V501⚠		CRT A48AKH13X01 K	TCRT190CP043
		CRT TYPE B	
L551⚠		DEFLECTION YOKE KDY3MDD74X	LLBY00ZMS024
V501⚠		CRT A48AKH13X	TCRT190CP044
V501-1		C.P.MAGNET JH225-014 or	XM04000BV009
		CPM E-225-F01	XM04000ETC01
V501-2		WEDGE FT-00110W	XV10000T4001
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001
		CRT TYPE C	
L551⚠		DEFLECTION YOKE LLBY00ZSY008 or	LLBY00ZSY008
⚠		DEFLECTION YOKE KDY3MDD18X	LLBY00ZMS019
V501⚠		CRT A48LVL095X	TCRT190MS011
V501-1		C.P.MAGNET JH225-014 or	XM04000BV009
		CPM E-225-F01	XM04000ETC01
V501-2		WEDGE FT-00110W	XV10000T4001
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001
		CRT TYPE D	
L551⚠		DEFLECTION YOKE LLBY00ZSY006 or	LLBY00ZSY006
⚠		DEFLECTION YOKE CDY-M2019F	LLBY00ZQS004
V501⚠		CRT A48JLL90X	TCRT190QS009
V501-1		C.P.MAGNET JH225-014 or	XM04000BV009
		CPM E-225-F01	XM04000ETC01
V501-2		WEDGE FT-00110W	XV10000T4001
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001
		CRT TYPE E	
L551⚠		DEFLECTION YOKE LLBY00ZSY007 or	LLBY00ZSY007
⚠		DEFLECTION YOKE CDY-M2023F or	LLBY00ZQS005
⚠		DEFLECTION YOKE DSE-1922FU(T)	LLBY00ZSM007
V501⚠		CRT A48LRH93X(W)	TCRT190P7002
V501-1		C.P.MAGNET JH225-014 or	XM04000BV009
		CPM E-225-F01	XM04000ETC01
V501-2		WEDGE FT-00110W	XV10000T4001
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001
		CRT TYPE F	
L551⚠		DEFLECTION YOKE 330P510A37	LLBY00ZTHA01
V501⚠		CRT A48LGS30X	TCRT190THA01
V501-1		C.P.MAGNET JH225-014 or	XM04000BV009
		CPM E-225-F01	XM04000ETC01
V501-2		WEDGE FT-00110W	XV10000T4001
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001

Ref. No.	Mark	Description	Part No.
CRT TYPE G			
L551⚠		DEFLECTION YOKE LLBY00ZSY007 or	LLBY00ZSY007
⚠		DEFLECTION YOKE CDY-M2023F or	LLBY00ZQS005
⚠		DEFLECTION YOKE DSE-1922FU(T)	LLBY00ZSM007
V501⚠		CRT A48LRH93X(W)D	TCRT190PTD01
V501-1		C.P.MAGNET JH225-014 or	XM04000BV009
		CPM E-225-F01	XM04000ETC01
V501-2		WEDGE FT-00110W	XV10000T4001
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001

Table 1 (V501 and L551 Combination)

Note 1: Purity and Convergence Adjustments must be performed following CRT replacement. Refer to Electrical Adjustment Instructions.

Note 2: Please confirm CRT Type No. on the CRT Warning Label which is located on the CRT. Then See the Table 1 for V501 and L551 combination chart.
Please refer this CRT, Deflection Yoke combination chart for parts order.

[SRC2213W]

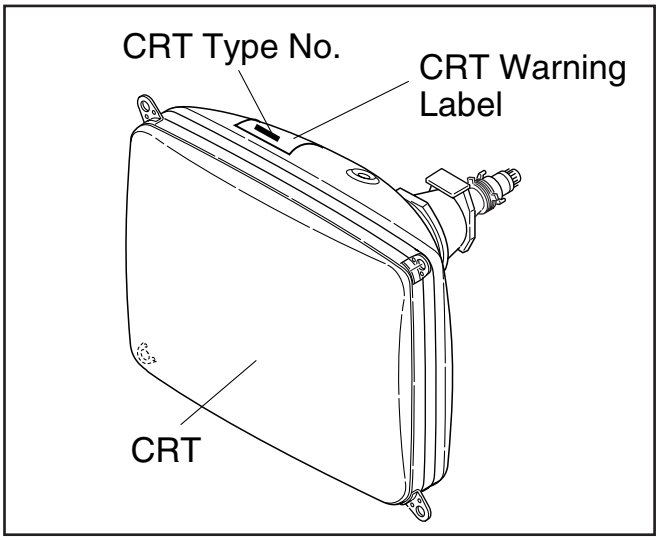
V501: CRT Type No.	V501: CRT Part No.	L551: Deflection Yoke Part No.
A34AGT13X	TCRT190CP036	LLBY00ZSY005
		LLBY00ZMS011
A34JQQ093X	TCRT190MS010	LLBY00ZSY002
		LLBY00ZMS027
A34KQW42X	TCRT190SM013	LLBY00ZMS027
		LLBY00ZSY002
		LLBY00ZQS008
		LLBY00ZSM008
A34JLL90X(W)	TCRT190QS015	LLBY00ZQS001
A34LRQ90X(VW)	TCRT190P7003	LLBY00ZQS007
		LLBY00ZSY003
		LLBY00ZMS004
A34KPU02XX	TCRT190GS016	LLBY00ZSY002
		LLBY00ZMS027
		LLBY00ZQS008
A34JXV70X	TCRT190THA02	LLBY00ZSY002
		LLBY00ZMS027
		LLBY00ZQS008

[SRC2419]

V501: CRT Type No.	V501: CRT Part No.	L551: Deflection Yoke Part No.
A48AKH13X01 K	TCRT190CP043	---------
A48AKH13X	TCRT190CP044	LLBY00ZMS024
A48LVL095X	TCRT190MS011	LLBY00ZSY008
		LLBY00ZMS019
A48JLL90X	TCRT190QS009	LLBY00ZSY006
		LLBY00ZQS004
A48LRH93X(W)	TCRT190P7002	LLBY00ZSY007
		LLBY00ZQS005
		LLBY00ZSM007
A48LGS30X	TCRT190THA01	LLBY00ZTHA01

V501: CRT Type No.	V501: CRT Part No.	L551: Deflection Yoke Part No.
A48LRH93X(W)D	TCRT190PTD01	LLBY00ZSY007
		LLBY00ZQS005
		LLBY00ZSM007

CRT Warning Label Location



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

Comparison Chart of Models and Marks

Model	Mark
SRC2213W	A
SRC2419	B

MMA CBA

Ref. No.	Mark	Description	Part No.
	A B	MMA CBA MMA CBA Consists of the following	0ESA06094 0ESA06097
		MAIN CBA CRT CBA SENSOR CBA	---------- ---------- 0ESA06170

MAIN CBA

Ref. No.	Mark	Description	Part No.
		MAIN CBA Consists of the following	----------
		CAPACITORS	
C002		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C003		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C005		ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
		ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C007		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C008		ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMAVSL100
C032		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C033		ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
		ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C036		CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C037		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C039		ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C042		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C043		CHIP CERAMIC CAP. F Z 0.022µF/50V	CHD1JZB0F223
C044		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C046		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C047		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C048		ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
		ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C049		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C052		CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C053		FILM CAP.(P) 0.018µF/50V J	CA1J183MS029
C054		CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C203		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C206		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C207		ELECTROLYTIC CAP.(SS.T) 47µF/25V M H7	CA1E470S6028
C208		ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C210		CHIP CERAMIC CAP. F Z 0.47µF/10V	CHD1AZB0F474
C211		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C212		CHIP CERAMIC CAP. CH J 22pF/50V	CHD1JJBCH220
C213		CHIP CERAMIC CAP. CH J 22pF/50V	CHD1JJBCH220
C214		ELECTROLYTIC CAP.(SS.T) 220µF/10V M H7	CA1A221S6028
C216		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C217		CHIP CERAMIC CAP. CH D 10pF/50V	CHD1JDBCH100
C218		CHIP CERAMIC CAP. CH J 15pF/50V	CHD1JJBCH150
C219		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C220		ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C221		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C222		CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JKB0B222
C223		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C224		CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C225		CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJBCH561
C231		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C232		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C233		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C235		CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C236		CERAMIC CAP.(AX) F Z 0.047µF/16V	CCA1CZTFZ473
C238		CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C239		ELECTROLYTIC CAP. 22µF/50V M or	CE1JMASDL220
		ELECTROLYTIC CAP. 22µF/50V M	CE1JMASTL220
C240		CERAMIC CAP.(AX) B J 560pF/50V	CCA1JJT0B561
C241		CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C242		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C243		ELECTROLYTIC CAP. 22µF/16V M LL or	CE1CMASLH220
		ELECTROLYTIC CAP. 22µF/16V M LL	CE1CMASLL220
C245		ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASDL221
		ELECTROLYTIC CAP. 220µF/16V M	CE1CMASTL221
C247		ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASDL221
		ELECTROLYTIC CAP. 220µF/16V M	CE1CMASTL221
C250		CERAMIC CAP.(AX) F Z 0.1µF/50V	CCA1JZTFZ104
C252		ELECTROLYTIC CAP.(SS.T) 100µF/16V M H7	CA1C101S6028
C253		ELECTROLYTIC CAP. 100µF/6.3V M or	CE0KMASDL101
		ELECTROLYTIC CAP. 100µF/6.3V M	CE0KMASTL101
C254		ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
		ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C257		CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C265		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C266		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C267		CERAMIC CAP.(AX) CH J 100pF/50V	CA1J101TU008
C301		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C302		CHIP CERAMIC CAP. CH J 33pF/50V	CHD1JJBCH330
C303		CHIP CERAMIC CAP. CH J 33pF/50V	CHD1JJBCH330
C304		CHIP CERAMIC CAP. CH J 33pF/50V	CHD1JJBCH330
C309		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105

Ref. No.	Mark	Description	Part No.
C310		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C314		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C315		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C316		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZB0F225
C317		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C319		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C320		CHIP CERAMIC CAP. F Z 0.47µF/10V	CHD1AZB0F474
C321		ELECTROLYTIC CAP. 220µF/6.3V M H7	CE0KMAVSL221
C322		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C323		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZB0F225
C324		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C325		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C326		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C327		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C330		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C331		ELECTROLYTIC CAP.(SS.T) 220µF/10V M H7	CA1A221S6028
C336		ELECTROLYTIC CAP. 1µF/50V H7(P=2.5MM)	CA1J1R0S6023
C337		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C338		CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZB0F225
C339		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C340		CHIP CERAMIC CAP. CH J 47pF/50V	CHD1JJBCH470
C342		ELECTROLYTIC CAP.(SS.T) 220µF/10V M H7	CA1A221S6028
C351		ELECTROLYTIC CAP.(SS.T) 220µF/10V M H7	CA1A221S6028
C352		ELECTROLYTIC CAP.(SS.T) 220µF/10V M H7	CA1A221S6028
C410		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C411		ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C412		CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C413		CHIP CERAMIC CAP. CH J 390pF/50V	CHD1JJBCH391
C416		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C417		CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C418		CHIP CERAMIC CAP. F Z 0.1µF/50V	CHD1JZB0F104
C419		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C420		ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C421		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C422		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C423		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C424		ELECTROLYTIC CAP. 0.1µF/50V M H7	CE1JMAVSLR10
C425		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C426		ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C427		CERAMIC CAP.(AX) B K 0.01µF/50V	CA1J103TU011
C428		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C429		ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C430		CHIP CERAMIC CAP. B K 0.022µF/50V	CHD1JKB0B223
C431		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C432		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C435		ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C436		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C438		CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C439		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C441		CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C442		CHIP CERAMIC CAP. F Z 0.1µF/50V	CHD1JZB0F104
C443		CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C444		ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C445		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C447		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C449		CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C552		FILM CAP.(P) 0.22µF/50V J or	CA1J224MS029

Ref. No.	Mark	Description	Part No.
		MYLAR CAP. 0.22µF/50V J or	CMA1JJS00224
		TF CAP. 0.22µF/50V J	CT1J224MS045
C553	A	ELECTROLYTIC CAP. 1µF/50V LL or	CE1JMASLH1R0
	A	ELECTROLYTIC CAP. 1µF/50V M LL or	CE1JMASLL010
	A	ELECTROLYTIC CAP. 1µF/50V M LL	CE1JMASLL1R0
C553	B	ELECTROLYTIC CAP. 2.2µF/50V LL or	CE1JMASLH2R2
	B	ELECTROLYTIC CAP. 2.2µF/50V M LL	CE1JMASLL2R2
C555		ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
		ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C556		ELECTROLYTIC CAP. 1000µF/25V M or	CE1EMZPDL102
		ELECTROLYTIC CAP. 1000µF/25V M	CE1EMZPTL102
C558		CERAMIC CAP.(AX) B K 0.01µF/50V	CA1J103TU011
C559		ELECTROLYTIC CAP. 330µF/35V M or	CE1GMASDL331
		ELECTROLYTIC CAP. 330µF/35V M	CE1GMASTL331
C560		FILM CAP.(P) 0.01µF/100V J	CMA2AJS00103
C572⚠	A	P.P. CAP 0.33µF/200V J or	CA2D334VC012
⚠	A	PP CAP. 0.33µF/250V J	CT2E334MS041
C572⚠	B	P.P.CAP 0.47µF/200 J or	CA2D474VC012
⚠	B	PP CAP. 0.47µF/250V J	CT2E474MS041
C574⚠		ELECTROLYTIC CAP. 4.7µF/250V M or	CE2EMASDL4R7
⚠		ELECTROLYTIC CAP. 4.7µF/250V M	CE2EMASTL4R7
C577		FILM CAP.(P) 0.022µF/50V J or	CA1J223MS029
		FILM CAP.(P) 0.022µF/50V J	CMA1JJS00223
C578		ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
		ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C580⚠	A	P.P. CAP 0.0082µF/1.6K J or	CA3C822VC011
⚠	A	METALLIZED FILM CAP. 0.0082µF/1.6KV J or	CT3C822F7004
⚠	A	POLYPROPYLENE FILM CAP. 0.0082µF/ 1.6KV or	CT3C822HJE16
⚠	A	PP CAP. 0.0082µF/1.6KV J	CT3C822MS039
C580⚠	B	P.P.CAP 0.01µF/1.6KV J or	CA3C103VC011
⚠	B	METALLIZED FILM CAP. 0.01µF/1.6KV J or	CT3C103F7004
⚠	B	POLYPROPYLENE FILM CAP. 0.01µF/ 1.6KV or	CT3C103HJE16
⚠	B	PP CAP. 0.01µF/1.6KV J	CT3C103MS039
C581⚠	B	CERAMIC CAP. 1000pF/2KV or	CA3D102PAN04
⚠	B	CERAMIC CAP RB 1000pF/2KV or	CA3D102TE006
⚠	B	CERAMIC CAP. BN 1000pF/2KV	CCD3DKA0B102
C584⚠		ELECTROLYTIC CAP. 1µF/160V M or	CE2CMASDL1R0
⚠		ELECTROLYTIC CAP. 1µF/160V M	CE2CMASTL010
C584⚠	B	ELECTROLYTIC CAP. 1µF/160V M	CE2CMASTL1R0
C591⚠		ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C592⚠		ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C593⚠		ELECTROLYTIC CAP. 2.2µF/50V M or	CE1JMASDL2R2
⚠		ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASTL2R2
C594	A	ELECTROLYTIC CAP. 10µF/160V M or	CE2CMZNTL100
	A	ELECTROLYTIC CAP. 10µF/160V M	CE2CMZPDL100
C594	B	ELECTROLYTIC CAP. 47µF/160V M W/F or	CE2CMZNDL470
	B	ELECTROLYTIC CAP. 47µF/160V M W/F	CE2CMZNTL470
C602⚠		SAFETY CAP. 4700pF/250V KX	CA2E472MR050
C605⚠		FILM CAP.(MP) 0.1µF/250V K or	CT2E104DC011
⚠		METALLIZED FILM CAP. 0.1µF/275V K or	CT2E104HJE06
⚠		METALLIZED FILM CAP. 0.1µF/250V	CT2E104MS037
C605⚠	A	LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C606		CERAMIC CAP. 0.01µF/AC250V or	CCD2EZA0F103
		CERAMIC CAP. E Z 0.01µF/500V or	CCD2JZP0E103
		CERAMIC CAP. F Z 0.01µF/500V	CCD2JZP0F103
C606⚠	B	LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C607		CERAMIC CAP. 0.01µF/AC250V or	CCD2EZA0F103
		CERAMIC CAP. E Z 0.01µF/500V or	CCD2JZP0E103
		CERAMIC CAP. F Z 0.01µF/500V	CCD2JZP0F103

Ref. No.	Mark	Description	Part No.
C607⚠	B	LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C610⚠	A	ALMINIUM ELECTROLYTIC CAP150μF/ 200V or	CA2D151NC088
⚠	A	ELECTROLYTIC CAPACIT0R 150μF/200V	CA2D151S6012
C610⚠	B	ELECTROLYTIC CAP. 220μF/200V or	CA2D221NC088
⚠	B	ELECTROLYTIC CAP. 220μF/200V SL X	CA2D221S6003
C611		CERAMIC CAP. 680pF/2KV or	CA3D681PAN04
		CERAMIC CAP. RB 680pF/2KV or	CA3D681TE006
		CERAMIC CAP. BN 680pF/2KV	CCD3DKA0B681
C612	A	FILM CAP.(P) 0.039μF/50V J or	CA1J393MS029
	A	FILM CAP.(P) 0.039μF/50V J	CMA1JJS00393
C612	B	FILM CAP.(P) 0.033μF/50V J or	CA1J333MS029
	B	FILM CAP.(P) 0.033μF/50V J	CMA1JJS00333
C613	A	FILM CAP.(P) 0.001μF/50V J or	CA1J102MS029
	A	FILM CAP.(P) 0.001μF/50V J	CMA1JJS00102
C613	B	FILM CAP.(P) 0.0012μF/50V J or	CA1J122MS029
	B	FILM CAP.(P) 0.0012μF/50V J	CMA1JJS00122
C614⚠	A	FILM CAP.(P) 0.056μF/50V J or	CA1J563MS029
⚠	A	FILM CAP.(P) 0.056μF/50V J	CMA1JJS00563
C614	B	FILM CAP.(P) 0.082μF/50V J or	CA1J823MS029
	B	FILM CAP.(P) 0.082μF/50V J	CMA1JJS00823
C615	A	CERAMIC CAP. 560pF/2KV or	CA3D561PAN04
	A	CERAMIC CAP. RB 560pF/2KV or	CA3D561TE006
	A	CERAMIC CAP. BN 560pF/2KV	CCD3DKA0B561
C615	B	CERAMIC CAP. 820pF/2KV or	CA3D821PAN04
	B	CERAMIC CAP RB 820pF/2KV or	CA3D821TE006
	B	CERAMIC CAP. BN 820pF/2KV	CCD3DKA0B821
C616⚠		ELECTROLYTIC CAP. 100μF/160V M W/F or	CE2CMZNTL101
⚠		ELECTROLYTIC CAP. 100μF/160V M or	CE2CMZPDL101
⚠		ELECTROLYTIC CAP. 100μF/160V M	CE2CMZPTL101
C617⚠		ELECTROLYTIC CAP. 470μF/35V M or	CE1GMASDL471
⚠		ELECTROLYTIC CAP. 470μF/35V M	CE1GMASTL471
C618⚠		ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
⚠		ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C619⚠		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
⚠		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C620⚠		ELECTROLYTIC CAP. 1000μF/16V M or	CE1CMZPDL102
⚠		ELECTROLYTIC CAP. 1000μF/16V M	CE1CMZPTL102
C622	A	CERAMIC CAP.(AX) CH J 100pF/50V	CA1J101TU008
C622	B	CERAMIC CAP.(AX) CH J 220pF/50V	CA1J221TU008
C623	A	FILM CAP.(P) 0.01μF/50V J or	CA1J103MS029
	A	FILM CAP.(P) 0.01μF/50V J	CMA1JJS00103
C624		CERAMIC CAP.(AX) B K 0.01μF/50V	CA1J103TU011
C625		ELECTROLYTIC CAP. 3.3μF/50V M or	CE1JMASDL3R3
		ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASTL3R3
C626		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMAVSL4R7
C627		ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
		ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C628		ELECTROLYTIC CAP. 10μF/50V M or	CE1JMASDL100
		ELECTROLYTIC CAP. 10μF/50V M	CE1JMASTL100
C629		ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
		ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470
C630		ELECTROLYTIC CAP. 100μF/10V M or	CE1AMASDL101
		ELECTROLYTIC CAP. 100μF/10V M	CE1AMASTL101
C631		ELECTROLYTIC CAP. 220μF/6.3V M or	CE0KMASDL221
		ELECTROLYTIC CAP. 220μF/6.3V M	CE0KMASTL221
C632		ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C633		ELECTROLYTIC CAP. 47μF/35V M or	CE1GMASDL470
		ELECTROLYTIC CAP. 47μF/35V M	CE1GMASTL470

Ref. No.	Mark	Description	Part No.
C634		ELECTROLYTIC CAP. 100μF/16V M or	CE1CMASDL101
		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASTL101
C635		ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMAVSL470
C636		CHIP CERAMIC CAP. F Z 0.1μF/50V	CHD1JZB0F104
C639		CERAMIC CAP. B K 2200pF/500V	CCD2JKS0B222
C648		ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMAVSL220
C650	A	ELECTROLYTIC CAP. 47μF/25V M or	CE1EMASDL470
	A	ELECTROLYTIC CAP. 47μF/25V M	CE1EMASTL470
C801		ELECTROLYTIC CAP. 220μF/16V M or	CE1CMASDL221
		ELECTROLYTIC CAP. 220μF/16V M	CE1CMASTL221
C802		ELECTROLYTIC CAP. 470μF/16V M or	CE1CMASDL471
		ELECTROLYTIC CAP. 470μF/16V M	CE1CMASTL471
C803		ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMAVSL220
C804		ELECTROLYTIC CAP. 0.22μF/50V M H7	CE1JMAVSLR22
C805		CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C852		ELECTROLYTIC CAP. 33μF/16V M H7	CE1CMAVSL330
C853		CHIP CERAMIC CAP. F Z 0.1μF/50V	CHD1JZB0F104
C854		ELECTROLYTIC CAP. 22μF/16V M H7	CE1CMAVSL220
C856		CHIP CERAMIC CAP. F Z 0.1μF/50V	CHD1JZB0F104
C858		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMAVSL4R7
C861		CHIP CERAMIC CAP. CH J 820pF/50V	CHD1JJBCH821
C862		CHIP CERAMIC CAP. B K 0.015μF/50V	CHD1JKB0B153
C863		ELECTROLYTIC CAP. 4.7μF/50V M H7	CE1JMAVSL4R7
C865		CHIP CERAMIC CAP. B K 0.01μF/50V	CHD1JKB0B103
C866		CHIP CERAMIC CAP. B K 2700pF/50V	CHD1JKB0B272
C867		CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C872		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMAVSL221
C873		ELECTROLYTIC CAP.(SS.T) 100μF/16V M H7	CA1C101S6028
C874		CERAMIC CAP. B K 470pF/100V or	CCD2AKS0B471
		CERAMIC CAP. B K 470pF/500V	CCD2JKS0B471
C875		FILM CAP.(P) 0.018μF/50V J or	CA1J183MS029
		FILM CAP.(P) 0.018μF/100V J	CMA2AJS00183
CONNECTORS			
CN571		CONNECTOR BASE, 5P RTB-1.5-5P or	J3RTC05JG001
		CONNECTOR BASE, 5P TV-50P-05-V3	J3TVC05TG002
CN601		CONNECTOR BASE, 2P RTB-1.5-2P or	J3RTC02JG001
		CONNECTOR BASE, 2P TV-50P-02-V3	J3TVC02TG002
CN801⚠		STRAIGHT PIN HEADER, 2P 173981-2 or	1770258
⚠		STRAIGHT CONNECTOR BASE 00 8283 0212 00 000	J383C02UG002
DIODES			
D031		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D203		LED MIE-534A2 or	NPZZM1E534A2
		LED SIR-563ST3F P or	QPQPS1R563ST
		LED SIR-563ST3F Q	QPQQS1R563ST
D204		LED LTL-4214M1 or	NPQZLTL4214M
		LED LAMP 333HT/F45-50K or	NPWK333HTF45
		LED LAMP 333HT/F45-50L or	NPWL333HTF45
		LED LAMP 333HT/F45-50M	NPWM333HTF45
D208		ZENER DIODE DZ-6.2BSBT265 or	NDTB0DZ6R2BS
		ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D225		ZENER DIODE DZ-6.2BSBT265 or	NDTB0DZ6R2BS
		ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D226		ZENER DIODE DZ-6.2BSBT265 or	NDTB0DZ6R2BS
		ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
D227		PCB JUMPER D0.6-P5.0	JW5.0T
D231		ZENER DIODE DZ-5.6BSBT265 or	NDTB0DZ5R6BS
		ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D251⚠		ZENER DIODE DZ-15BSBT265 or	NDTB00DZ15BS

Ref. No.	Mark	Description	Part No.
⚠		ZENER DIODE MTZJT-7715B	QDTB00MTZJ15
D254		ZENER DIODE DZ-18BSAT265 or	NDTA00DZ18BS
		ZENER DIODE MTZJT-7718A	QDTA00MTZJ18
D302		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D303		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D304		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D305		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D306		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D309		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D311		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D312		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D313		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D314		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D315		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D401		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D552		DIODE 1N5397-B or	NDLZ001N5397
		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D571⚠		DIODE FR154 or	NDLZ000FR154
⚠		FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D572⚠		DIODE FR104-B	NDLZ000FR104
D584⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D585		ZENER DIODE DZ-5.1BSBT265 or	NDTB0DZ5R1BS
		ZENER DIODE MTZJT-775.1B	QDTB0MTZJ5R1
D591⚠		ZENER DIODE DZ-36BSBT265 or	NDTB00DZ36BS
⚠		ZENER DIODE MTZJT-7736B	QDTB00MTZJ36
D595	A	ZENER DIODE DZ-18BSBT265 or	NDTB00DZ18BS
	A	ZENER DIODE MTZJT-7718B	QDTB00MTZJ18
D595⚠	B	ZENER DIODE DZ-20BSBT265 or	NDTB00DZ20BS
⚠	B	ZENER DIODE MTZJT-7720B	QDTB00MTZJ20
D596⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D597⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D598⚠		DIODE FR104-B	NDLZ000FR104
D603⚠		DIODE 1N5397-B or	NDLZ001N5397
⚠		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D604⚠		DIODE 1N5397-B or	NDLZ001N5397
⚠		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D605⚠		DIODE 1N5397-B or	NDLZ001N5397
⚠		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D606⚠		DIODE 1N5397-B or	NDLZ001N5397
⚠		RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D607⚠	A	ZENER DIODE DZ-20BSCT265 or	NDTC00DZ20BS
⚠	A	ZENER DIODE MTZJT-7720C	QDTC00MTZJ20
D607⚠	B	ZENER DIODE DZ-24BSCT265 or	NDTC00DZ24BS
⚠	B	ZENER DIODE MTZJT-7724C	QDTC00MTZJ24
D609⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133

Ref. No.	Mark	Description	Part No.
D610		ZENER DIODE DZ-5.6BSBT265 or	NDTB0DZ5R6BS
		ZENER DIODE MTZJT-775.6B	QDTB0MTZJ5R6
D611		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D613⚠		RECOVERY DIODE ERC18-04	QDZZ0ERC1804
D613⚠	A	RECTIFIER DIODE 15DF4	QDQZ00015DF4
D614⚠		DIODE FR104-B	NDLZ000FR104
D615⚠		DIODE 1ZC33 or	QDQZ0001ZC33
⚠		ZENER DIODE RD33FB	QDQZ000RD33F
D616⚠		SCHOTTKY BARRIER DIODE ERB81-004 or	AERB81004***
⚠		SCHOTTKY BARRIER DIODE 21DQ04	QDQZ0021DQ04
D617⚠		SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
⚠		SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D618⚠	A	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
⚠	A	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D618⚠	B	DIODE FR154 or	NDLZ000FR154
⚠	B	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D619		DIODE FR104-B	NDLZ000FR104
D620⚠		ZENER DIODE DZ-6.8BSBT265 or	NDTB0DZ6R8BS
⚠		ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
D621⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D622⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D623⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D625	A	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
D625	B	SWITCHING DIODE 1N4148 or	NDTZ001N4148
	B	SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D626		ZENER DIODE DZ-36BSAT265 or	NDTA00DZ36BS
		ZENER DIODE MTZJT-7736A	QDTA00MTZJ36
D627⚠	A	ZENER DIODE DZ-13BSBT265 or	NDTB00DZ13BS
⚠	A	ZENER DIODE MTZJT-7713B	QDTB00MTZJ13
D627	B	ZENER DIODE DZ-16BSBT265 or	NDTB00DZ16BS
	B	ZENER DIODE MTZJT-7716B	QDTB00MTZJ16
D628		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D629⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D631		ZENER DIODE DZ-6.8BSAT265 or	NDTA0DZ6R8BS
		ZENER DIODE MTZJT-776.8A	QDTA0MTZJ6R8
D632		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D633		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D634		ZENER DIODE DZ-8.2BSBT265 or	NDTB0DZ8R2BS
		ZENER DIODE MTZJT-778.2B	QDTB0MTZJ8R2
D635		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D636		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D638⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D639		SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
		SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D640⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D641⚠		ZENER DIODE DZ-36BSAT265 or	NDTA00DZ36BS

Ref. No.	Mark	Description	Part No.
⚠		ZENER DIODE MTZJT-7736A	QDTA00MTZJ36
D643		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D646		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D801⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D802		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D803		SWITCHING DIODE 1N4148 or	NDTZ001N4148
		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D964⚠		SWITCHING DIODE 1N4148 or	NDTZ001N4148
⚠		SWITCHING DIODE 1SS133(T-77)	QDTZ001SS133
D965⚠		ZENER DIODE DZ-6.2BSBT265 or	NDTB0DZ6R2BS
⚠		ZENER DIODE MTZJT-776.2B	QDTB0MTZJ6R2
ICS			
IC001		IC:VIF/SIF M61113FP	QSZBA0SHT019
IC201⚠		MICRO COMPUTER M37762M8A-8D2GP	QSZAA0RHT018
IC202		IC(EEP-ROM) M24C02-WMN6 or	NSZAA0SSS004
		IC:EEPROM CAT24WC02JI or	NSZBA0SBG001
		IC:MEMORY BR24C02F-W or	QSMBA0SRM003
		IC BR24L02F-WE2	QSZBA0TRM068
IC301⚠		MICRO-COMPUTER/VCD M61275FP-61	QSZAB0RMB133
IC401		IC:Y/C/A LA71205M-MPB-E	QSZBA0RSY037
IC551⚠		VERTICAL OUTPUT IC LA78040A	QSBBA0SSY003
IC601⚠		PHOTOCOUPLER LTV-817B-F or	NPEB0LTV817F
⚠		PHOTOCOUPLER LTV-817C-F or	NPEC0LTV817F
⚠		PHOTO COUPLER PC817X6	QPE600PC817X
IC602⚠		VOLTAGE REGULATOR KIA7805API or	NSBBA0SJY011
⚠		VOLTAGE REGULATOR KA7805A	NSZBA0SF3052
IC801		AUDIO AMP IC AN17811A	QSZAA0SMS015
COILS			
L001		PCB JUMPER D0.6-P5.0	JW5.0T
L002	A	PCB JUMPER D0.6-P5.0	JW5.0T
L031		PCB JUMPER D0.6-P5.0	JW5.0T
L033		INDUCTOR 15µH-J-26T or	LLAXJATTU150
		INDUCTOR 15µH-K-26T	LLAXKDTKA150
L041		PCB JUMPER D0.6-P5.0	JW5.0T
L202		INDUCTOR 0.10µH-K-26T	LLAXKATTUR10
L211⚠		CHOKE COIL 47µH-K or	LLBD00PKV005
⚠		CHOKE COIL 47µH-K	LLBD00PKV007
L302		PCB JUMPER D0.6-P5.0	JW5.0T
L303		PCB JUMPER D0.6-P5.0	JW5.0T
L402		INDUCTOR 22µH-J-26T or	LLAXJATTU220
		INDUCTOR 22µH-K-26T	LLAXKDTKA220
L403		CHOKE COIL 47µH-K or	LLBD00PKV005
		CHOKE COIL 47µH-K	LLBD00PKV007
L404		CHOKE COIL 47µH-K or	LLBD00PKV005
		CHOKE COIL 47µH-K	LLBD00PKV007
L557	B	CHOKE COIL 22µH-K	LLBD00PKV006
L601⚠		LINE FILTER 5.0MH 6Y075 or	LLBG00ZKT004
⚠		LINE FILTER SA-91213B or	LLBG00ZSA002
⚠		LINE FILTER UU10.5-A	LLBG00ZY2008
L871		PCB JUMPER D0.6-P5.0	JW5.0T
L872		INDUCTOR 47µH-K-5FT or	LLARKBSTU470
		INDUCTOR 47µH-K-5FT	LLARKDSKA470
TRANSISTORS			
Q205		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q205	A	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815

Ref. No.	Mark	Description	Part No.
Q206		PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q301		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q401		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR 2SA1015-GR(TPE2) or	QQS102SA1015
		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q402		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR 2SA1015-GR(TPE2) or	QQS102SA1015
		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q571⚠	A	TRANSISTOR TT2138LS-YB11 or	QQZZ00TT2138
⚠	A	TRANSISTOR 2SC5884000RF	QQZZ02SC5884
Q571⚠	B	TRANSISTOR TT2140LS-YB11 or	QQZZ00TT2140
⚠	B	TRANSISTOR 2SC5885000RF	QQZZ02SC5885
Q572		TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q591⚠		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q591⚠	A	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q601⚠		MOS FET 2SK3563	QFWZ02SK3563
Q602⚠		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q604		TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q604⚠		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q604	A	TRANSISTOR KTC3199(GR)	NQS10KTC3199
Q604⚠	B	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠	B	TRANSISTOR 2SC2785(J)	QQSJ02SC2785
Q605		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q605	A	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q606⚠		TRANSISTOR KTA1271(Y) or	NQSY0KTA1271
⚠		TRANSISTOR 2SA950(O) or	Q2SA9500TPE2
⚠		TRANSISTOR 2SA950(Y)	Q2SA950YTPE2
Q607		TRANSISTOR KTC3199(GR) or	NQS10KTC3199
		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q607	A	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q608⚠		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q608⚠	A	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q609		TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q610⚠		TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
⚠		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q611⚠		TRANSISTOR 2SC1815-GR(TPE2) or	QQS102SC1815
⚠		TRANSISTOR 2SC2785(F)	QQSF02SC2785
Q611	A	TRANSISTOR KTC3199(GR)	NQS10KTC3199
Q611⚠	B	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠	B	TRANSISTOR 2SC2785(J)	QQSJ02SC2785
Q612		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q613	A	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q613⚠		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q871		TRANSISTOR KTA1267(GR) or	NQS10KTA1267
		TRANSISTOR 2SA1015-GR(TPE2) or	QQS102SA1015
		TRANSISTOR 2SA1175(F)	QQSF02SA1175
Q872		TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
		TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
		TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q873		TRANSISTOR 2SC1815-GR(TPE2) or	QQS102SC1815

Ref. No.	Mark	Description	Part No.
		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U)	QSC3331UNPAA
Q874		TRANSISTOR 2SC1815-GR(TPE2) or	QQS102SC1815
		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U)	QSC3331UNPAA
Q875		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
		RESISTORS	
R002		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R003		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R032		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R033		CHIP RES.(1608) 1/10W J 390k Ω	RRXAJB5Z0394
R034		CHIP RES.(1608) 1/10W J 150 Ω	RRXAJB5Z0151
R035		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R036		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R037		CHIP RES.(1608) 1/10W J 180 Ω	RRXAJB5Z0181
R038		CHIP RES.(1608) 1/10W J 150 Ω	RRXAJB5Z0151
R039		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R040		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R041		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R042		CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R201		CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R202		CHIP RES.(1608) 1/10W F 22k Ω or	RRXAFB5H2202
		CHIP RES. 1/10W F 22k Ω	RRXAFB5J2202
R203		CHIP RES.(1608) 1/10W F 470 Ω or	RRXAFB5H4700
		CHIP RES. 1/10W F 470 Ω	RRXAFB5J4700
R204		CHIP RES.(1608) 1/10W F 1.5k Ω or	RRXAFB5H1501
		CHIP RES. 1/10W F 1.5k Ω	RRXAFB5J1501
R205		CHIP RES.(1608) 1/10W F 3.6k Ω or	RRXAFB5H3601
		CHIP RES. 1/10W F 3.6k Ω	RRXAFB5J3601
R206		CHIP RES.(1608) 1/10W F 10k Ω or	RRXAFB5H1002
		CHIP RES. 1/10W F 10k Ω	RRXAFB5J1002
R208		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R209		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R210		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R211		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R212		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R213		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R214		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R215		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R216		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R217		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R218		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R219		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R220		CHIP RES.(1608) 1/10W J 390k Ω	RRXAJB5Z0394
R221		PCB JUMPER D0.6-P5.0	JW5.0T
R222		CHIP RES.(1608) 1/10W J 270k Ω	RRXAJB5Z0274
R223		CHIP RES.(1608) 1/10W J 560 Ω	RRXAJB5Z0561
R224		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R225		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R226		CHIP RES.(1608) 1/10W J 33k Ω	RRXAJB5Z0333
R227		CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R228	A	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R229		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R232		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R233		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R234		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJB5Z0122
R235		CHIP RES.(1608) 1/10W J 47 Ω	RRXAJB5Z0470
R236		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R237		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102

Ref. No.	Mark	Description	Part No.
R238		CHIP RES.(1608) 1/10W J 470k Ω	RRXAJB5Z0474
R239		CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R240		CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R241		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R243		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R244		CHIP RES.(1608) 1/10W J 1M Ω	RRXAJB5Z0105
R245		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R247		CHIP RES.(1608) 1/10W J 820 Ω	RRXAJB5Z0821
R248		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R249		CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R250		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R251		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R252		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R253		CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R254		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R255		PCB JUMPER D0.6-P5.0	JW5.0T
R256		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R257		PCB JUMPER D0.6-P5.0	JW5.0T
R258		PCB JUMPER D0.6-P5.0	JW5.0T
R259		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R260		PCB JUMPER D0.6-P5.0	JW5.0T
R262		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R263		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJB5Z0393
R267		CHIP RES.(1608) 1/10W J 82k Ω	RRXAJB5Z0823
R269⚠		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R270		CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R273		CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJB5Z0182
R274		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R275		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R278		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R279		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R283		CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R291		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R292		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R301		CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R303		CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R305		CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R308		CARBON RES. 1/4W J 120k Ω	RCX4JATZ0124
R310		CHIP RES.(1608) 1/10W J 180k Ω	RRXAJB5Z0184
R312		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R314		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R315		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R316		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R329		CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R331		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R332		CARBON RES. 1/2W J 39 Ω or	RCX2390KA013
		CARBON RES. 1/2W J 39 Ω	RCX2JZQZ0390
R333		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R334		CHIP RES.(1608) 1/10W J 56k Ω	RRXAJB5Z0563
R335		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R336		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R337		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R338		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R339		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R340		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R405		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R406		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R407		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R408		CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R409		CHIP RES.(1608) 1/10W J 39k Ω	RRXAJB5Z0393
R410		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332

Ref. No.	Mark	Description	Part No.
R414		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R415		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R417		CHIP RES.(1608) 1/10W J 220 Ω	RRXAJB5Z0221
R418		CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R419		CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R423		CHIP RES.(1608) 1/10W J 3.9M Ω	RRXAJB5Z0395
R424		CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R425		CHIP RES.(1608) 1/10W J 82k Ω	RRXAJB5Z0823
R426		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R427		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R428		CHIP RES.(1608) 1/10W J 680k Ω	RRXAJB5Z0684
R429		CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJB5Z0122
R431		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R432		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R544⚠		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R551		CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R552⚠	A	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R552⚠	B	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R556		CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R557		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R558	A	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R558	B	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R559	A	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R559	B	PCB JUMPER D0.6-P5.0	JW5.0T
R560	A	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R560	B	CARBON RES. 1/4W J 5.1k Ω	RCX4JATZ0512
R561	A	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R561	B	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R562		CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R563		CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R565	A	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R565⚠	B	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R566	A	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R566⚠	B	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R568	B	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R570	A	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R570⚠	B	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R571		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R572	B	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R573	A	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R573	B	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R574⚠		METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102DP004
⚠		METAL OXIDE FILM RES. 2W J 1k Ω	RN02102ZU001
R575⚠		METAL OXIDE FILM RES. 2W J 1k Ω or	RN02102DP004
⚠		METAL OXIDE FILM RES. 2W J 1k Ω	RN02102ZU001
R576		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R577		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R578	A	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R578⚠	B	CARBON RES. 1/4W J 2.7 Ω	RCX4JATZ02R7
R579	A	CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R579⚠	B	CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R580	A	CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R580⚠	B	CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R581	A	CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R581⚠	B	CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R583⚠	A	METAL OXIDE FILM RES. 1W J 2.2 Ω or	RN012R2DP003
⚠	A	METAL OXIDE FILM RES. 1W J 2.2 Ω	RN012R2ZU001
R583⚠	B	METAL OXIDE FILM RES. 2W J 1.5 Ω or	RN021R5DP004
⚠	B	METAL OXIDE FILM RES. 2W J 1.5 Ω	RN021R5ZU001
R584⚠		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R587⚠		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104

Ref. No.	Mark	Description	Part No.
R588⚠		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R590		METAL OXIDE FILM RES. 1W J 3.3k Ω or	RN01332DP003
		METAL OXIDE FILM RES. 1W J 3.3k Ω	RN01332ZU001
R592⚠		CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R593	A	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R593⚠	B	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R594⚠		CHIP RES.(1608) 1/10W J 56k Ω	RRXAJB5Z0563
R595⚠		CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R596		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R597⚠		CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R598⚠		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R599⚠		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R602⚠	A	CEMENT RESISTOR 3W K 1.2 Ω or	RW031R2PAK10
⚠	A	CEMENT RES. 3W K 1.2 Ω or	RW031R2PG007
⚠	A	CEMENT RES. 5W K 1.2 Ω or	RW051R2DP005
⚠	A	CEMENT RESISTOR 5W J 1.2 Ω H:10MM or	RW051R2PAK10
⚠	A	CEMENT RESISTOR 5W K 1.2 Ω	RW051R2PG001
R602⚠	B	CEMENT RES. 5W K 1.2 Ω or	RW051R2DP007
⚠	B	CEMENT RESISTOR 5W J 1.2 Ω or	RW051R2PAK11
⚠	B	CEMENT RES. 5W K 1.2 Ω	RW051R2PG002
R603⚠	A	METAL OXIDE FILM RES. 2W J 0.39 Ω or	RN02R39DP004
⚠	A	METAL OXIDE FILM RES. 2W J 0.39 Ω	RN02R39ZU001
R603⚠	B	METAL OXIDE FILM RES. 2W J 0.27 Ω or	RN02R27DP004
⚠	B	METAL OXIDE FILM RES. 2W J 0.27 Ω	RN02R27ZU001
R604⚠	A	CARBON RES. 1/4W J 1.5M Ω	RCX4JATZ0155
R604⚠	B	CARBON RES. 1/4W J 1.2M Ω	RCX4JATZ0125
R605		CARBON RES. 1/4W J 1.2M Ω	RCX4JATZ0125
R606		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R607		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R608	A	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R608	B	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R610		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R613		CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R614	A	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R614	B	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R616	A	CARBON RES. 1/4W J 1 Ω	RCX4JATZ01R0
R616⚠	B	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R617		CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R618	A	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R618⚠	B	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R619	A	PCB JUMPER D0.6-P12.5	JW12.5T
R619	B	CARBON RES. 1/2W J 1k Ω or	RCX2102KA013
	B	CARBON RES. 1/2W J 1k Ω	RCX2JZQZ0102
R620	A	METAL OXIDE FILM RES. 2W J 10k Ω or	RN02103DP004
	A	METAL OXIDE FILM RES. 2W J 10k Ω	RN02103ZU001
R620⚠	B	METAL OXIDE FILM RES. 2W J 8.2k Ω or	RN02822DP004
⚠	B	METAL OXIDE FILM RES. 2W J 8.2k Ω	RN02822ZU001
R621⚠	A	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R621⚠	B	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R622	A	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R622	B	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R623		CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R624⚠		CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R625⚠	A	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R625⚠	B	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R629⚠		CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R630⚠		CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R631⚠		CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R632	A	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R632⚠	B	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561

Ref. No.	Mark	Description	Part No.
R633⚠		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R634		CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R635		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R637	A	METAL OXIDE FILM RES. 2W J 10k Ω or	RN02103DP004
	A	METAL OXIDE FILM RES. 2W J 10k Ω	RN02103ZU001
R637⚠	B	METAL OXIDE FILM RES. 2W J 8.2k Ω or	RN02822DP004
⚠	B	METAL OXIDE FILM RES. 2W J 8.2k Ω	RN02822ZU001
R639⚠		CARBON RES. 1/2W J 1k Ω or	RCX2102KA013
⚠		CARBON RES. 1/2W J 1k Ω	RCX2JZQZ0102
R640⚠		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R641		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R642	A	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R642	B	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R643	A	PCB JUMPER D0.6-P5.0	JW5.0T
R643	B	CARBON RES. 1/4W J 27 Ω	RCX4JATZ0270
R644		CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R645	A	CARBON RES. 1/4W J 5.6 Ω	RCX4JATZ05R6
R645⚠	B	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R647	A	CARBON RES. 1/2W J 3.9 Ω or	RCX23R9KA013
	A	CARBON RES. 1/2W J 3.9 Ω	RCX2JZQZ03R9
R648⚠		CARBON RES. 1/4W J 5.6 Ω	RCX4JATZ05R6
R650⚠		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R651⚠	A	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R651⚠	B	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R652⚠	A	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R652⚠	B	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R653		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R654	A	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R654⚠	B	CARBON RES. 1/4W J 6.8 Ω	RCX4JATZ06R8
R655⚠	A	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R655⚠	B	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R656⚠		CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2
R657	A	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R657⚠	B	CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2
R659		CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R660		PCB JUMPER D0.6-P5.0	JW5.0T
R661⚠		CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2
R662		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R665	A	CARBON RES. 1/4W J 5.6 Ω	RCX4JATZ05R6
R665⚠	B	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R666	A	CARBON RES. 1/4W J 5.6 Ω	RCX4JATZ05R6
R666	B	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R667		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R670	A	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R670	B	CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121
R671	B	CARBON RES. 1/4W J 1.8 Ω	RCX4JATZ01R8
R701		CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R801⚠	A	METAL OXIDE FILM RES. 1W J 12 Ω or	RN01120DP003
⚠	A	METAL OXIDE FILM RES. 1W J 12 Ω	RN01120ZU001
R801⚠	B	METAL OXIDE FILM RES. 1W J 18 Ω or	RN01180DP003
⚠	B	METAL OXIDE FILM RES. 1W J 18 Ω	RN01180ZU001
R802⚠		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R803⚠		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R804		CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R805		CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R806		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R807		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R808		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R851		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R852		CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R853		CHIP RES.(1608) 1/10W J 2.2M Ω	RRXAJB5Z0225

Ref. No.	Mark	Description	Part No.
R856		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R857		CHIP RES.(1608) 1/10W J 3.9k Ω	RRXAJB5Z0392
R862		PCB JUMPER D0.6-P5.0	JW5.0T
R863		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R864		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R865		CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R866		CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R867		CHIP RES.(1608) 1/10W J 270 Ω	RRXAJB5Z0271
R868		CHIP RES.(1608) 1/10W J 330k Ω	RRXAJB5Z0334
R871		CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R872		CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R873		CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R874		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R875		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R876		CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R877		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R980⚠		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R981⚠		CARBON RES. 1/2W J 1.2 Ω	RCX2JZQZ01R2
SWITCHES			
SW201		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW202		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW203		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW204		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW205		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW206		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW207		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW208		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW209		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW210		TACT SWITCH SKQNAED010 or	SST0101AL055
		TACTILE SWITCH KSHG612BT	SST0101HH027
SW211		LEAF SWITCH LSA-1142-2AU or	SSC0101KB014
		LEAF SWITCH MXS00052MPP0 or	SSC0101MCE01
		LEAF SWITCH MXS00981MPP0	SSC0101MCE02
SW212		ROTARY MODE SWITCH SSS-53MD	SSR0106KB003
MISCELLANEOUS			
BC571	A	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC571	B	PCB JUMPER D0.6-P5.0	JW5.0T
BC572	B	BEAD CORE B16 RH 3.5X3X1.3	XL03003XM002
BC601		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC602		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC603		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC605		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC606		BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CF031		4.5M TRAP XT4.5MB2 or	FBE455PLN001
		CERAMIC TRAP 4.5MHz or	FBE455PMR003
		CERAMIC TRAP 4.5MHz	FBE455PMS002
CF032		4.5M FILTER LTH4.5MCB or	FBB455PLN001
		CERAMIC FILTER SFSRA4M50CF00-B0	FBB455PMR004
CL100	B	WIRE 040/BLA/AWG26#1007	WX3001A65505
CL201		FMN CONNECTOR, TOP 12P 12FMN-BTRK	JCFNG12JG002
CL301		LEAD WIRE WX3001A65512	WX3001A65512

Ref. No.	Mark	Description	Part No.
CL602		LEAD WIRE WX3001A25505	WX3001A25505
F601⚠		FUSE 51MS040L or	PAFC20CHV402
⚠		FUSE STC4A125V U/CT or	PAGE20CW3402
⚠		FUSE 4.00A/125V or	PAGG20CNG402
⚠		FUSE 4.00A/125V	PAGU20CAG402
FH601		FUSE HOLDER MSF-015	XH01Z00LY001
FH601⚠		FUSE HOLDER FH-V-03078	XH01Z00DK001
FH602		FUSE HOLDER MSF-015	XH01Z00LY001
FH602⚠		FUSE HOLDER FH-V-03078	XH01Z00DK001
J145		CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
J188		INDUCTOR 10µH-J-26T or	LLAXJATTU100
		INDUCTOR 10µH-K-26T	LLAXKDTKA100
JK701		RCA JACK(YELLOW) MSP-281V4-B or	JXRL010LY003
		RCA JACK 1P:YELLOW DA1-15A3N0S001	JXRL010RP026
JK702		RCA JACK(WHITE) MSP-281V1-B or	JXRL010LY005
		RCA JACK 1P:WHITE DA1-15A4N0S001	JXRL010RP025
JK801		EARPHONE JACK HTJ-035-1ZEBTZ or	JYSL030GE001
		EARPHONE JACK MSJ-035-12APC	JYSL030LY001
PS601⚠	A	THERMISTOR ZPB45BL7R0A	QNZZ45BL7R0A
PS601⚠	B	THERMISTOR ZPB45BL3R0A	QNBZ45BL3R0A
RS201		REMOTE RECEIVER PIC-37042LU	USESJRSKK033
SA601⚠		SURGE ABSORBER 470V+-10PER or	NVQZ10D471KB
⚠		SURGE ABSORBER CNR-10D471K	NVQZR10D471K
SF001⚠		SAW FILTER SAFGM45M7VHHzC0B03	FBB456PMR008
SG001⚠		GAP. FNR-G3.10D	FAZ000LD6005
T571⚠	A	FLYBACK TRANS BSC23-2603S or	LTF00CPS2054
⚠	A	FLYBACK TRANSFORMER JF0501-3101B	LTF00CPXB039
T571⚠	B	FLYBACK TRANS BSC22-2697S or	LTF00CPS2055
⚠	B	FLYBACK TRANSFORMER JF0501-3201A	LTF00CPXB040
T572		H0RIZONTAL DRIVE TRANS LP2-005	LTH00CPA5005
T601⚠	A	SWITCHING TRANS 01746 or	LTT00CPKT089
⚠	A	SWICHING TRANS CSA-SW0041	LTT00CPSA117
T601⚠	B	SWITCHING TRANS 02712	LTT00CPKT101
TB3		HEAD SHIELD(DC) T5400UA	0EM301721
TB7		LED HOLDER T5400UA	0EM407679
TB9	A	13VPOW HEAT SINK PHA T5400UA	0EM407602
TB9	B	19VPOW HEAT SINK PHB ASSEMBLYT7400UA	0EM407685
TB21		BUSH, LED(F) H3700UD	0VM409508
TB26		13V H/V HEAT SINK PGZ T5400UA	0EM301720
TL2		SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TP201		PCB JUMPER D0.6-P5.0	JW5.0T
TP202		PCB JUMPER D0.6-P25.0	JW25.0T
TP301		PCB JUMPER D0.6-P5.0	JW5.0T
TP302		PCB JUMPER D0.6-P5.0	JW5.0T
TP401		PCB JUMPER D0.6-P5.0	JW5.0T
TP402		PCB JUMPER D0.6-P5.0	JW5.0T
TU001⚠	A	TUNER UNIT TEQH9-900A	UTUNNTUAL033
TU001⚠	B	TUNER ENV56DC9G3 or	UTUNNTUMS010
⚠	B	TUNER B8135AP	UTUNNTUSP023
VR601⚠		CARBON P.O.T. 10k Ω B	VRCB103HH014
W601⚠		AC CORD WAC0172AS006 or	WAC0172AS006
⚠		AC CORD A0A0280-007 or	WAC0172LTE04
⚠		AC CORD PB8K9F9110A-057	WAC0172LW008
X201		X'TAL 32.768kHz(20PPM) or	FXC323LCHE01
		X'TAL 32.768kHz(20PPM) or	FXC323LCT001
		X'TAL 32.768kHz(20PPM) or	FXC323LDS002
		X'TAL 32.768kHz(20PPM) or	FXC323LJNY01
		X'TAL 32.768kHz(20PPM)	FXC323LQUA01
X202		X'TAL AT49-10.6 or	FXD106LDS002
		X'TAL HC-49/U 10.6MHz	FXD106LLN001
X301		X'TAL 3.579545MHz(30PPM) or	FXD355LCHE01
		X'TAL 3.579545 MHz	FXD355LLN003
X401		X'TAL 3.579545MHz(20PPM) or	FXC355LCHE01
		X'TAL 3.579545MHz(20PPM) or	FXC355LDS001
		X'TAL 3.579545MHz(20PPM)	FXC355LLN003

CRT CBA

Ref. No.	Mark	Description	Part No.
		CRT CBA Consists of the following	----------
		CAPACITORS	
C501		CERAMIC CAP. B K 1000pF/2KV or	CA3D102MR030
		CERAMIC CAP. B K 1000pF/2KV or	CCD3DKD0B102
		CERAMIC CAP. B K 1000pF/2KV	CCD3DKP0B102
C502		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
		ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
		ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C511	A	CHIP CERAMIC CAP. B K 390pF/50V	CHD1JKB0B391
C511	B	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JKB0B561
C521	A	CHIP CERAMIC CAP. B K 390pF/50V	CHD1JKB0B391
C521	B	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JKB0B561
C531	A	CHIP CERAMIC CAP. B K 390pF/50V	CHD1JKB0B391
C531	B	CHIP CERAMIC CAP. B K 560pF/50V	CHD1JKB0B561
		CONNECTORS	
CN505		CONNECTOR PIN, 1P LV or	1700576
		CONNECTOR PIN, 1P RT-01N-2.3A or	1730688
		PIN CONNECTOR 005P-5100	JTEA001TG001
		TRANSISTORS	
Q511		TRANSISTOR 2SC2482 TPE6	QQSZ02SC2482
Q511	A	TRANSISTOR KTC3207 or	NQSZ0KTC3207
	A	TRANSISTOR 2SC3468(D)-AE or	QQSD02SC3468
	A	TRANSISTOR 2SC3468(E)-AE	QQSE02SC3468
Q521		TRANSISTOR 2SC2482 TPE6	QQSZ02SC2482
Q521	A	TRANSISTOR KTC3207 or	NQSZ0KTC3207
	A	TRANSISTOR 2SC3468(D)-AE or	QQSD02SC3468
	A	TRANSISTOR 2SC3468(E)-AE	QQSE02SC3468
Q531		TRANSISTOR 2SC2482 TPE6	QQSZ02SC2482
Q531	A	TRANSISTOR KTC3207 or	NQSZ0KTC3207
	A	TRANSISTOR 2SC3468(D)-AE or	QQSD02SC3468
	A	TRANSISTOR 2SC3468(E)-AE	QQSE02SC3468
		RESISTORS	
R510⚠		METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
⚠		METAL OXIDE FILM RES. 1W J 15k Ω	RN01153ZU001
R511		CHIP RES.(1608) 1/10W J 15 Ω	RRXAJB5Z0150
R512		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R513		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R515	A	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R515	B	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R516		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R517		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R520⚠		METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
⚠		METAL OXIDE FILM RES. 1W J 15k Ω	RN01153ZU001
R521		CHIP RES.(1608) 1/10W J 15 Ω	RRXAJB5Z0150
R522		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R523		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R525	A	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R525	B	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471

Ref. No.	Mark	Description	Part No.
R526		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R527		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R530⚠		METAL OXIDE FILM RES. 1W J 15k Ω or	RN01153DP003
⚠		METAL OXIDE FILM RES. 1W J 15k Ω	RN01153ZU001
R531		CHIP RES.(1608) 1/10W J 15 Ω	RRXAJB5Z0150
R532		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R533		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R535	A	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R535	B	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R536		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R537		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
MISCELLANEOUS			
CL501A	A	LEAD WIRE 3P/300MM	WX1T5500-001
CL501A	B	LEAD WIRE 3P 390MM	WX1T7500-001
CL502A	A	LEAD WIRE 4P/300MM	WX1T5500-002
CL502A	B	LEAD WIRE 4P 385MM	WX1T7500-002
J501		PCB JUMPER D0.6-P7.5	JW7.5T
JK501⚠		CRT SOCKET ISMS02S	JSCC220PK003

SENSOR CBA

Ref. No.	Mark	Description	Part No.
		SENSOR CBA Consists of the following	0ESA06170
TRANSISTORS			
Q201		PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q202		PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
		PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12

DECK MECHANISM SECTION

13"/19" COLOR TV/VCR COMBINATION

SRC2213W/SRC2419

Sec. 2: Deck Mechanism Section

- **Standard Maintenance**
- **Alignment for Mechanism**
- **Disassembly/Assembly of Mechanism**
- **Alignment Procedures of Mechanism**
- **Deck Exploded Views**
- **Deck Parts List**

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Deck Parts List 2-7-1

STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ○: Check ●: Change

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 H**	**2,000 H**	**3,000 H**	**4,000 H**
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	ACE Head Assembly			●	
B573, B574	Reel (SP)(D2), Reel (TU)(D2)			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
B73	FE Head			●	
B133, B134	Idler Gear, Idler Arm		●		●
B410	Pinch Arm(A) Assembly		●		●
B414	M Brake (SP) Assembly		●		●
B416	M Brake (TU) Assembly		●		●
B525	LDG Belt		●		●
B569 (2 head only)	Cam Holder		●		●
B593 (4 head, 4 head HiFi only)	Cam Holder Assembly		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head) using 90% Isopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

Cleaning

Cleaning of Video Head

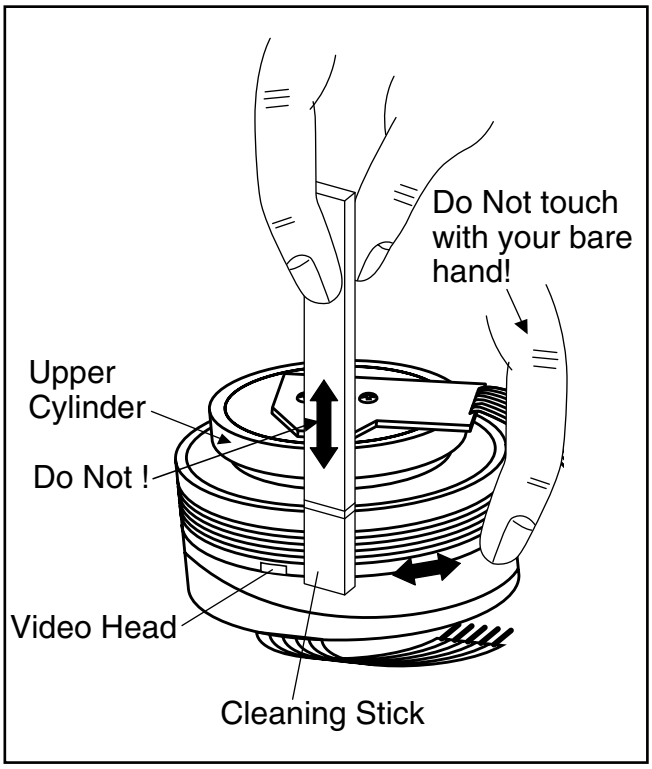
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of ACE Head

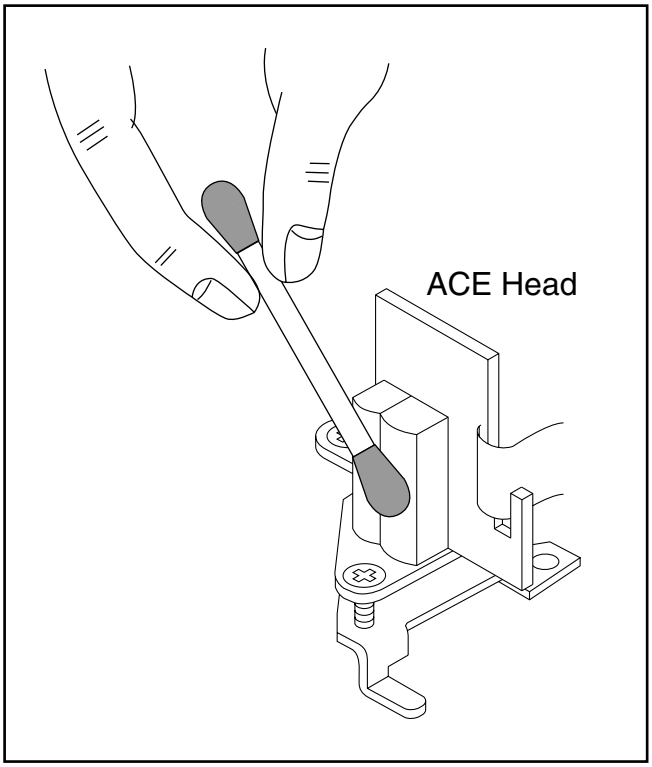
Clean the head with a cotton swab.

Procedure

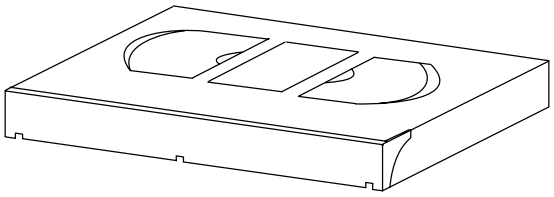
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

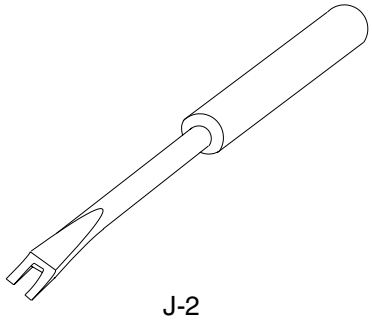
1. Avoid cleaning the ACE Head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



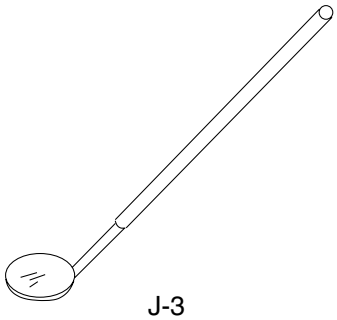
SERVICE FIXTURE AND TOOLS



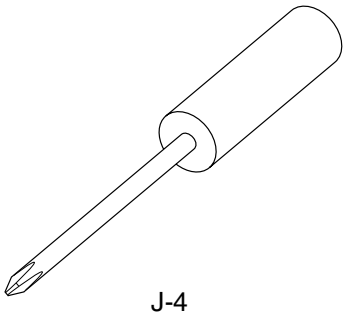
J-1-1, J-1-2



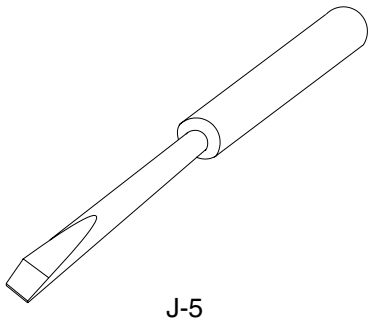
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL8A	Head Adjustment of ACE Head
J-1-2	Alignment Tape	FL8N (2 Head only) FL8NW (4 Head only)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

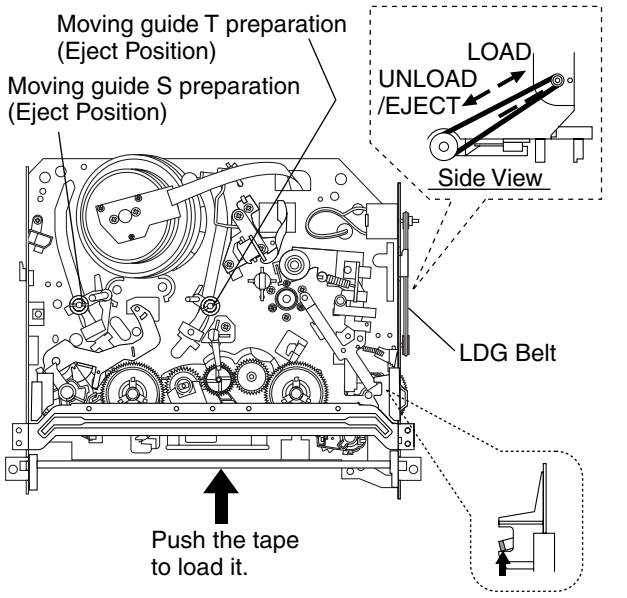


Fig. M1

Bottom View

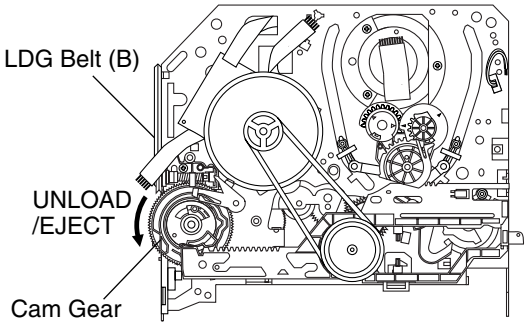


Fig. M2

1. Tape Interchangeability Alignment

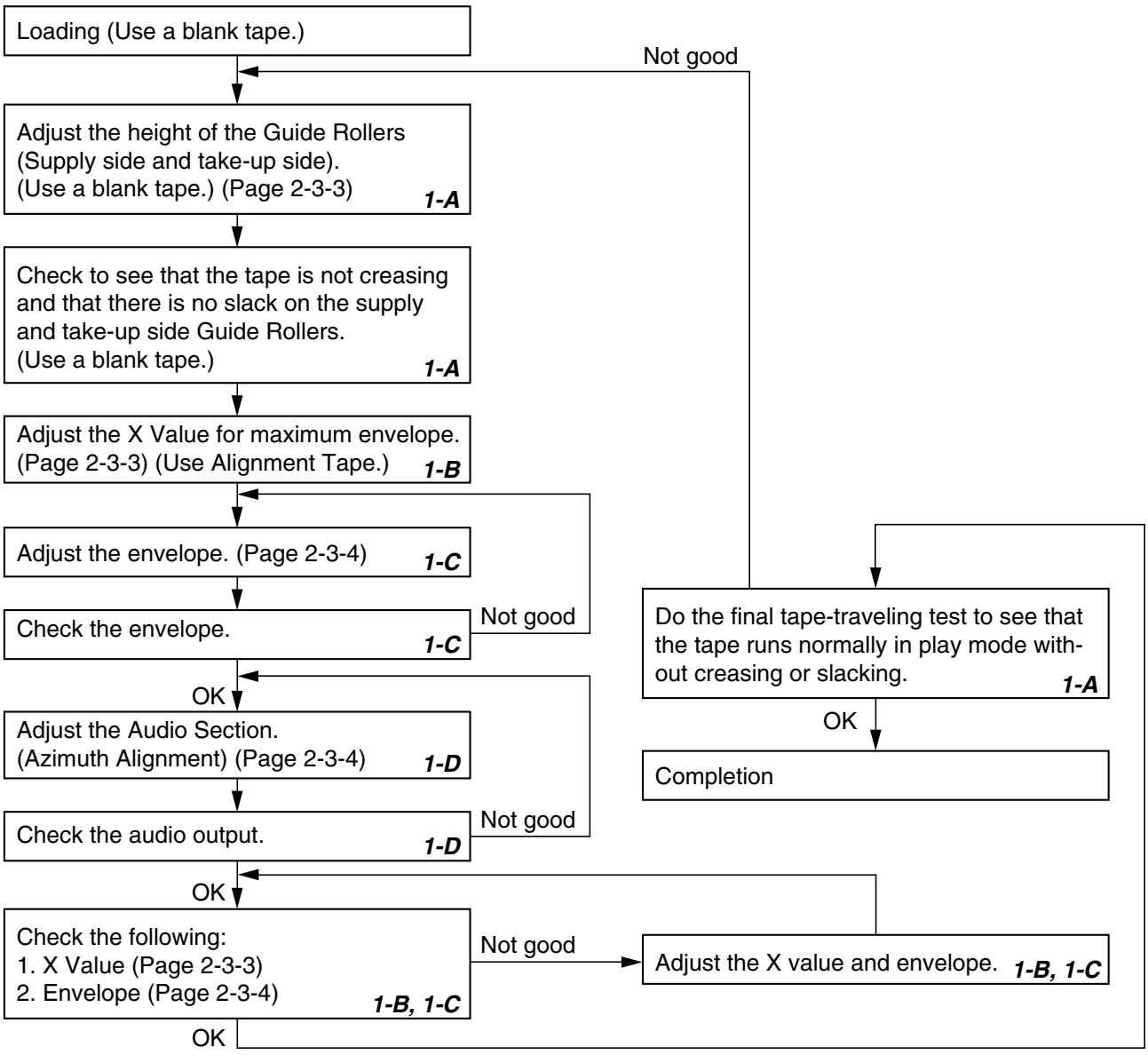
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL8NW)
Guide Roller Adj. Screwdriver
Flat Screwdriver (Purchase Locally)

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
Not good
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) (Page 2-3-3) 1-A
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) 1-A
Adjust the X Value for maximum envelope. (Page 2-3-3) (Use Alignment Tape.) 1-B
Adjust the envelope. (Page 2-3-4) 1-C
Check the envelope. 1-C
Not good
OK
Adjust the Audio Section. (Azimuth Alignment) (Page 2-3-4) 1-D
Check the audio output. 1-D
Not good
OK
Check the following:
1. X Value (Page 2-3-3)
2. Envelope (Page 2-3-4) 1-B, 1-C
Not good
Adjust the X value and envelope. 1-B, 1-C
OK
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. 1-A
OK
Completion

1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

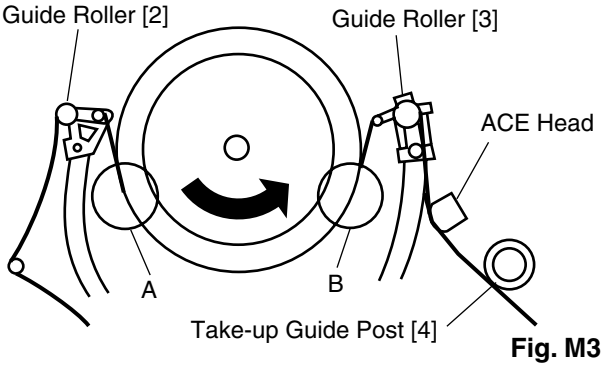


Fig. M3

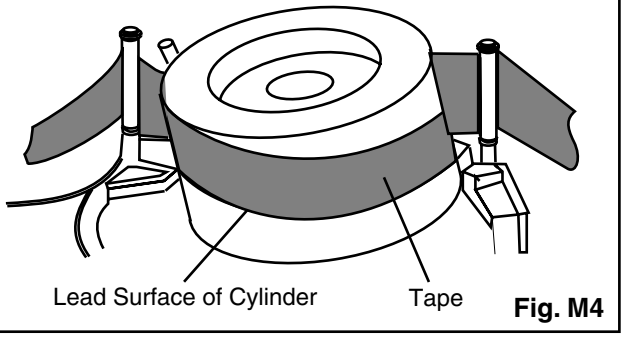


Fig. M4

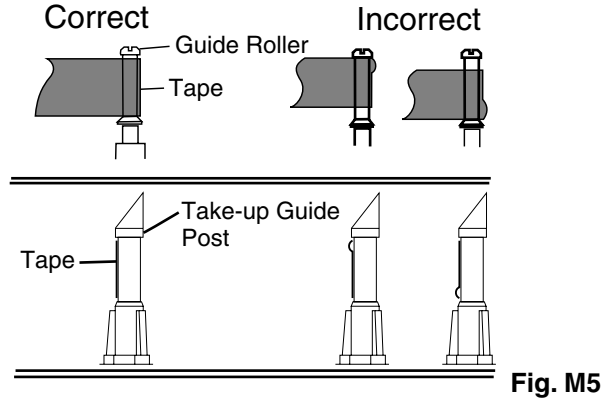


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)

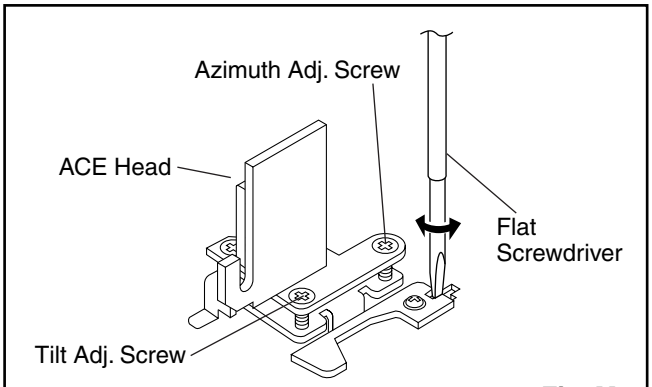


Fig. M6

1-B. X Value Alignment

Purpose:

To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

Symptom of Misalignment:

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP402 (V-ENV) and TP201 (CTL) on the Main CBA. Use TP202 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL8NW) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit then “PLAY” button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP402 (V-ENV) is maximum. (Fig. M6)

5. To shift the CTL waveform, press CH UP or CH DOWN button on the remote control unit. Then make sure that the maximum output position of PB FM envelope signal become within ±2ms from preset position.

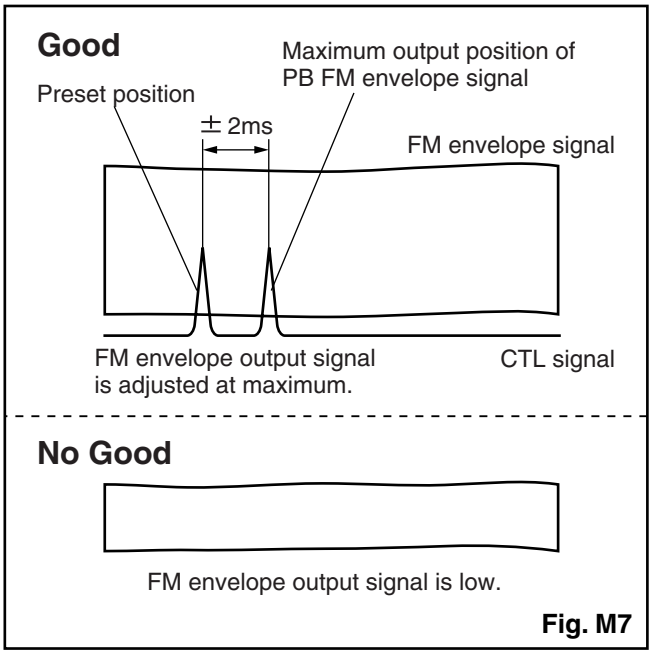


Fig. M7

6. Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit. and then “PLAY” button.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture, adjust the PB FM envelope becomes as flat as possible.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP402 (V-ENV) on the Main CBA. Use TP202 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL8NW). Set the Tracking Control Circuit to the preset position by pressing CH UP button and then “PLAY” button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

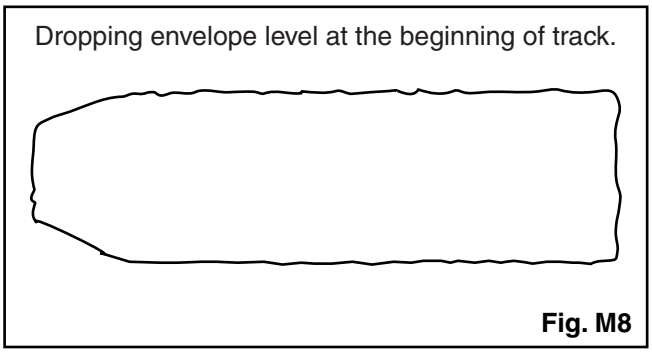


Fig. M8

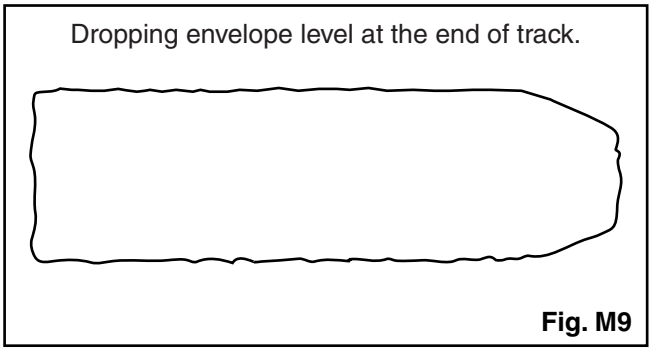


Fig. M9

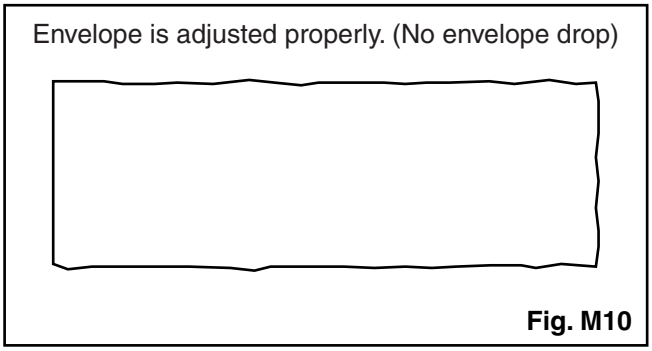


Fig. M10

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the “X Value Alignment.”

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL8NW) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-5-1 of Main Section.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig. DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4	(S-10)	
[3]	[2]	Slider (SP)	T	DM5	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5	*(L-2)	
[5]	[4]	Lock Lever	T	DM5	*(L-3), *(P-1)	
[6]	[2]	Cassette Plate	T	DM5		
[7]	[7]	Cylinder Assembly	T	DM1, DM6	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1, DM7	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	ACE Head Assembly	T	DM1, DM7	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1, DM8-1	*(P-2)	
[11]	[10]	C Door Opener	T	DM1, DM8-1	(S-4A), *(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1, DM8-1, DM8-2	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1, DM8-1, DM8-2		
[14]	[14]	FE Head	T	DM1, DM9	(S-5)	
[15]	[15]	Prism	T	DM1, DM9	(S-6)	
[16]	[2],[15]	Sensor Gear	T	DM1, DM9		
[17]	[2]	Slider Shaft	T	DM10	*(L-5)	
[18]	[17]	C Drive Lever (SP)	T	DM10		
[19]	[17]	C Drive Lever (TU)	T	DM10	(S-7), *(P-4)	
[20]	[7],[8], [10]	Capstan Motor	B	DM2, DM11	3(S-8), Cap Belt	
[21]	[21]	Clutch Assembly	B	DM2, DM12	(C-1)	
[22]	[22]	Cam Holder Assembly	B	DM2, DM12	*(L-6)	
[23]	[23]	Cam Gear (B)	B	DM2, DM12	(C-2), *(P-5)	
[24]	[24]	Mode Gear	B	DM2, DM13-1	(C-3)	
[25]	[21],[23], [24]	Mode Lever	B	DM2, DM13-1, DM13-2	(C-4), *(L-8)	
[26]	[22]	Worm Holder	B	DM2, DM13-1	(S-9), *(L-9), *(L-10)	
[27]	[26]	Pulley Assembly	B	DM2, DM13-1		
[28]	[25],[26]	Cam Gear (A)	B	DM2, DM13-1, DM13-2		

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[29]	[25]	Idler Gear	B	DM1, DM14		
[30]	[29]	Idler Arm	B	DM1, DM14	*(L-11)	
[31]	[25]	BT Arm	B	DM2, DM14	*(P-6)	
[32]	[25]	Loading Arm (SP) Assembly	B	DM2, DM14		(+)Refer to Alignment Sec.Page 2-5-1
[33]	[32]	Loading Arm (TU) Assembly	B	DM2, DM14		(+)Refer to Alignment Sec.Page 2-5-1
[34]	[2],[25]	M Brake (TU) Assembly	T	DM1, DM15	*(P-7), Brake Belt	
[35]	[2],[25]	M Brake (SP) Assembly	T	DM1, DM15	*(P-8)	
[36]	[35]	Tension Lever Assembly	T	DM1, DM15		
[37]	[36]	T Lever Holder	T	DM15	*(L-12)	
[38]	[34]	Reel (TU)(D2)	T	DM1, DM15		
[39]	[38]	M Gear	T	DM1, DM15		
[40]	[36]	Reel (SP)(D2)	T	DM1, DM15		
[41]	[32],[36]	Moving Guide S Preparation	T	DM1, DM16		
[42]	[33]	Moving Guide T Preparation	T	DM1, DM16		
[43]	[19]	TG Post Assembly	T	DM1, DM16	*(L-13)	
[44]	[28]	Rack Assembly	R	DM17	*(P-9)	(+)Refer to Alignment Sec.Page 2-5-1
[45]	[44]	F Door Opener	R	DM17		
[46]	[46]	Cleaner Assembly	T	DM1, DM6		
[47]	[46]	CL Post	T	DM6	*(L-14)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

Top View

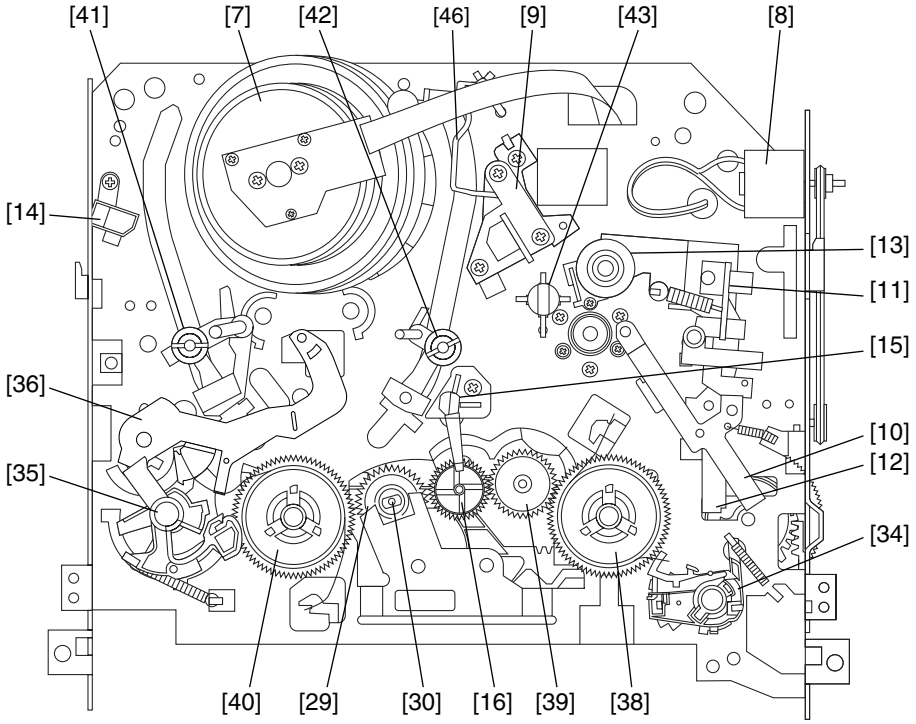


Fig. DM1

Bottom View

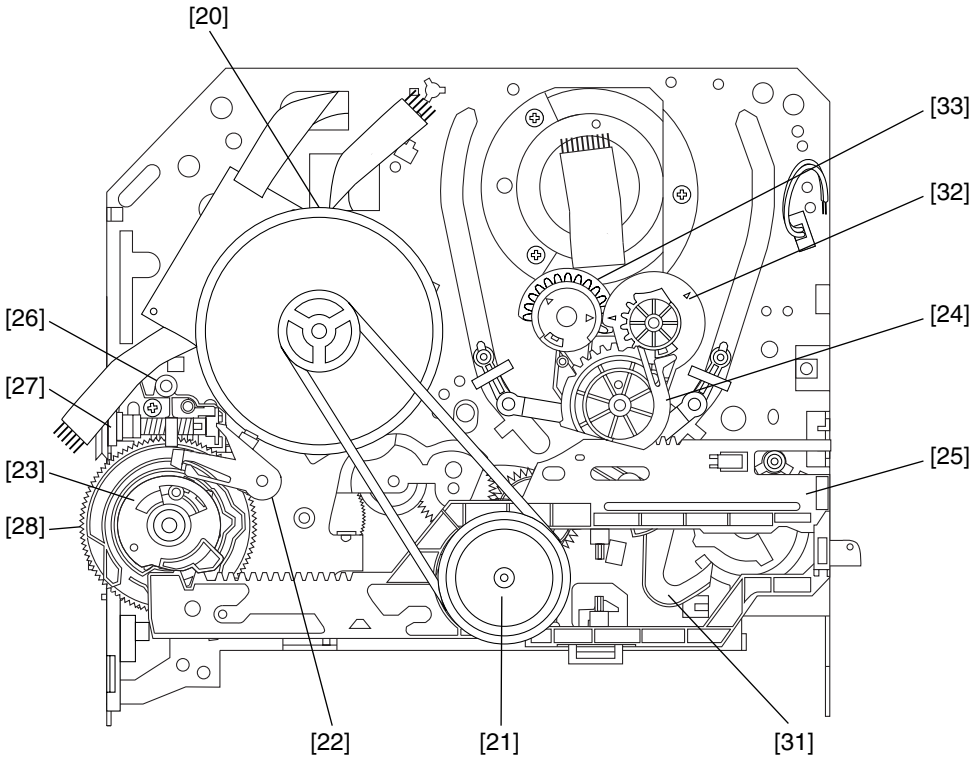


Fig. DM2

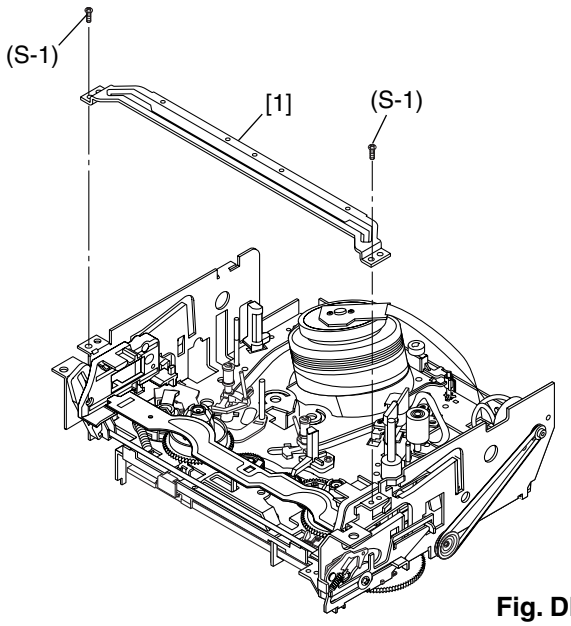
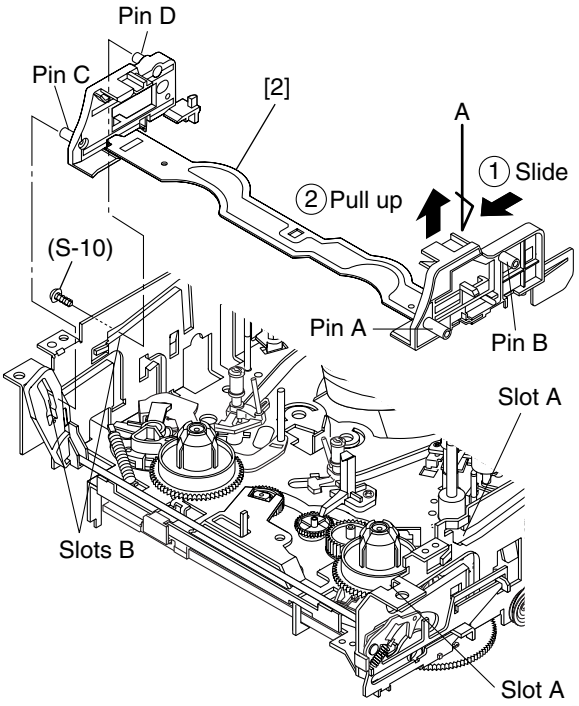


Fig. DM3



First, while pushing the locking tab as shown at right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.

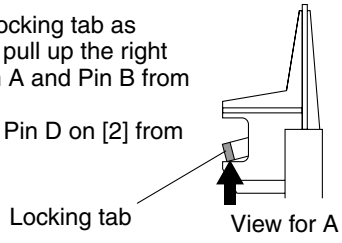
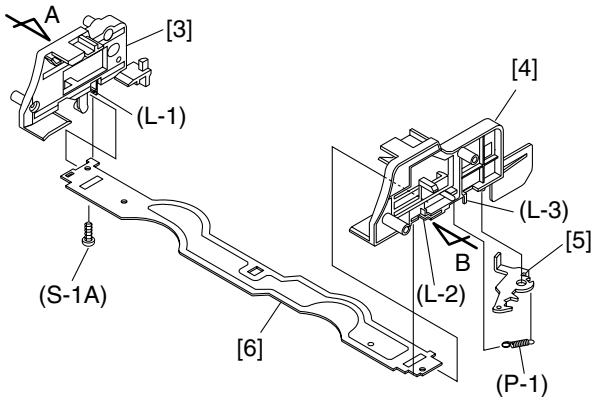
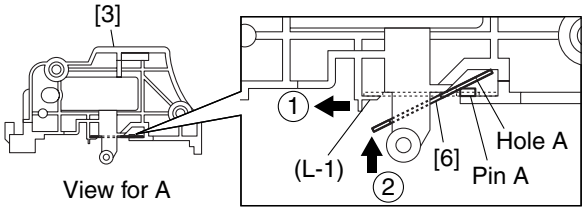


Fig. DM4



Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in a direction of arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.



Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in a direction of arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

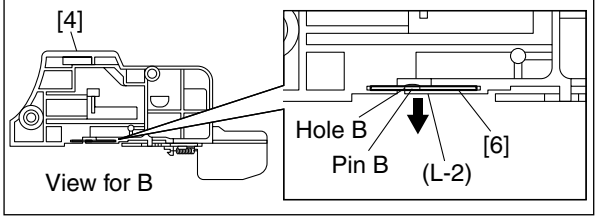


Fig. DM5

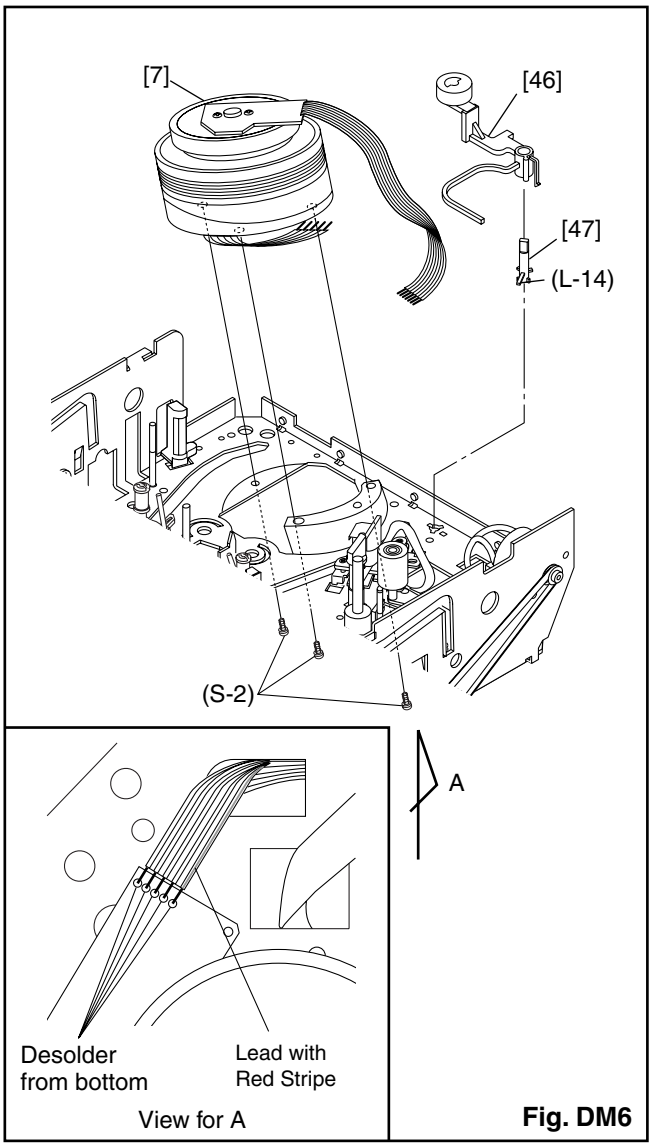


Fig. DM6

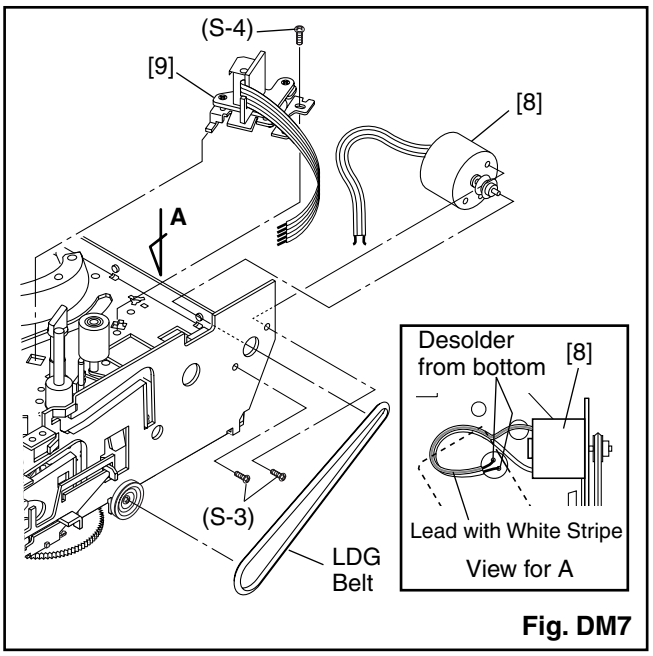


Fig. DM7

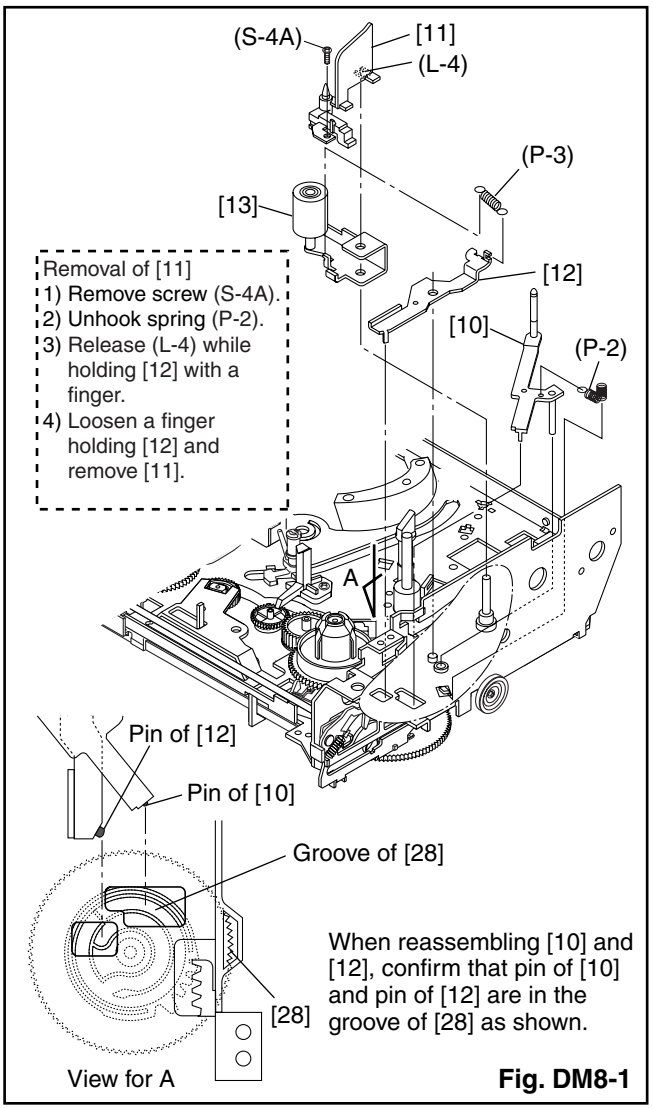


Fig. DM8-1

Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install then to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

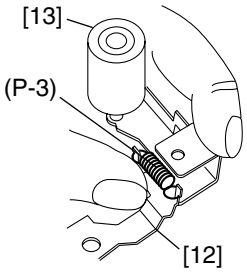


Fig. A

Install pin of [12] in groove of [28]. (Refer to Fig. B.)

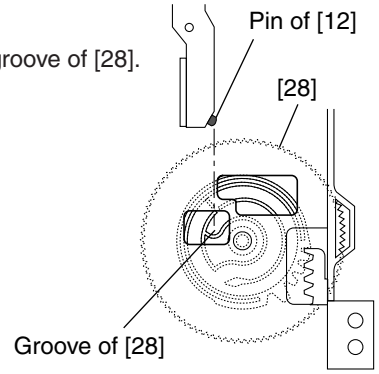


Fig. B (Top view)

Hold [12] and [13] till groove of pin of chassis looks and fit [13] in notch of chassis. Then, turn a few [13] while holding [12]. (Refer to Fig. C.)

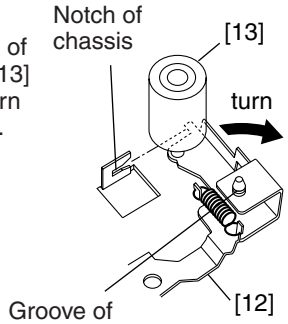


Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8-1.)

Fig. DM8-2

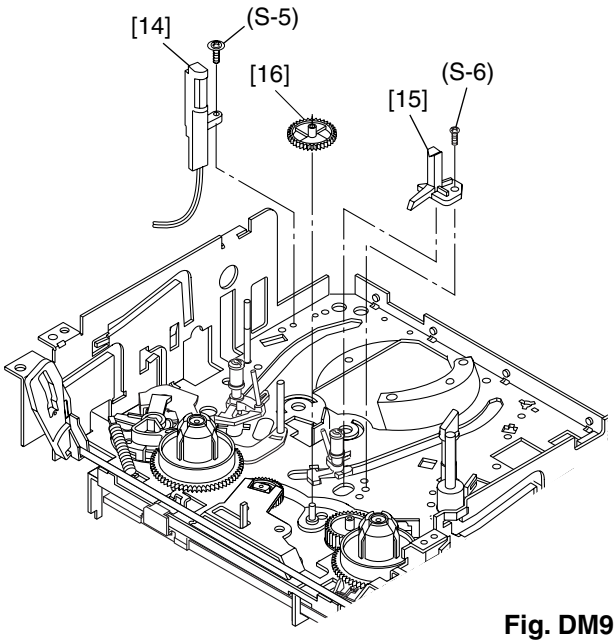


Fig. DM9

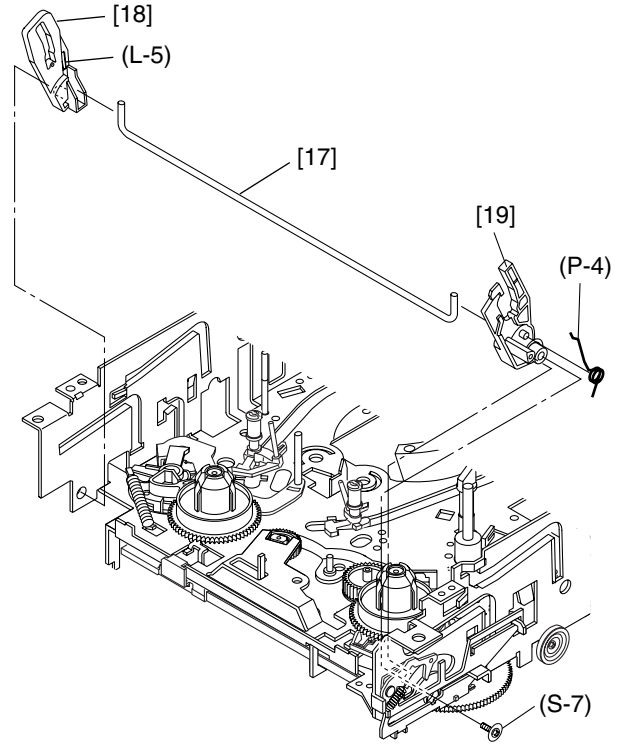
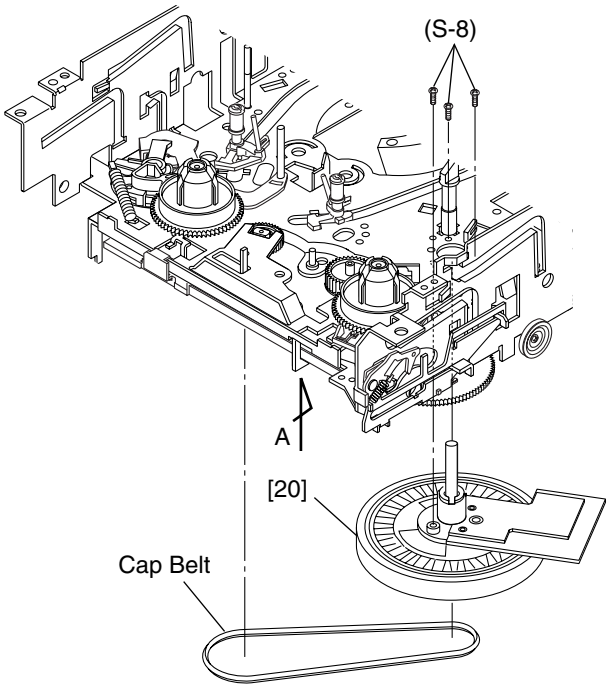
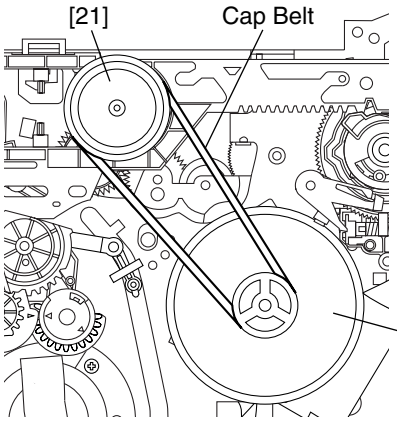


Fig. DM10

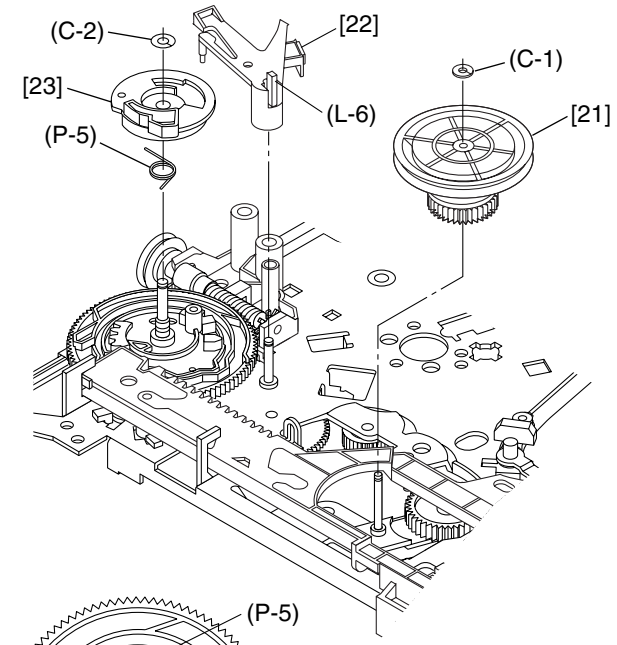


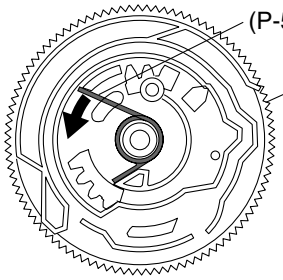
Installation position of Cap Belt



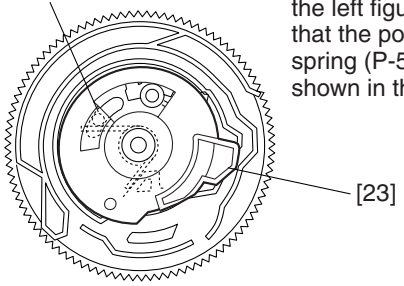
View for A

Fig. DM11



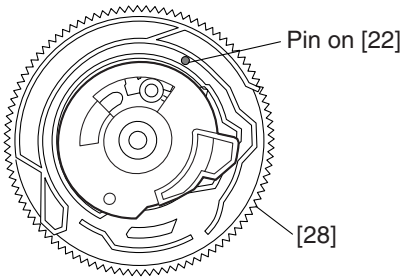


Pin on bottom of [23]



Top View

When installing [23], install the spring (P-5) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-5) to the direction of the arrow in the left figure and confirming that the position of the spring (P-5) is placed as shown in the left figure.



Position of pin on [22]

Fig. DM12

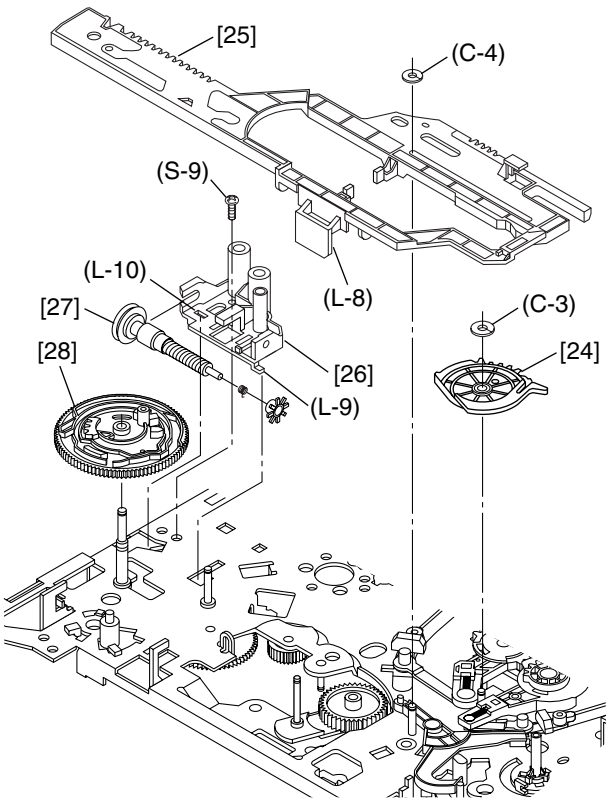
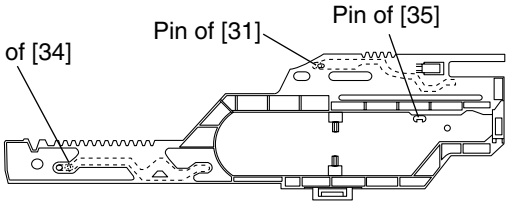
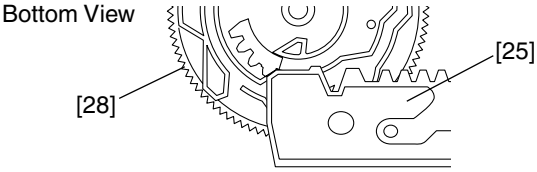


Fig. DM13-1

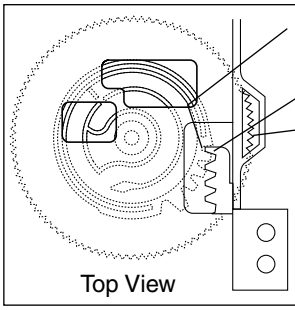
Installation of [25]

Position of Mode Lever when installed





Align [25] and [28] as shown.



When reassembling [28], align the first groove on [28] to the first tooth on [44] as shown.

Fig. DM13-2

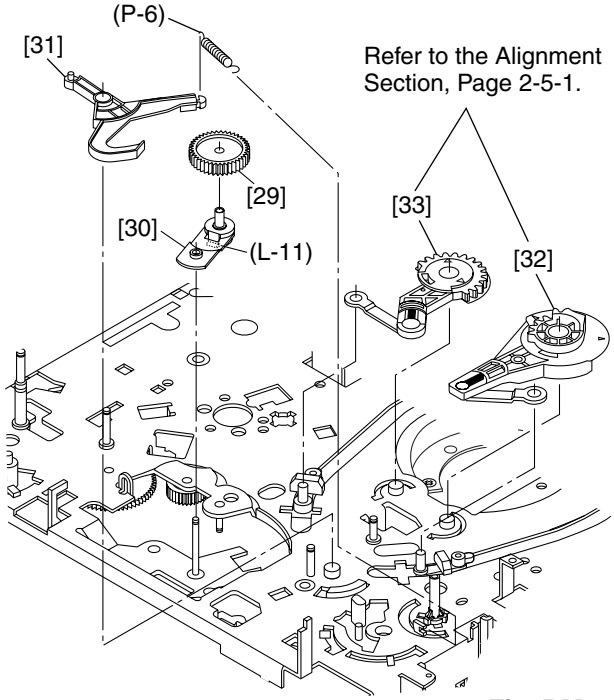


Fig. DM14

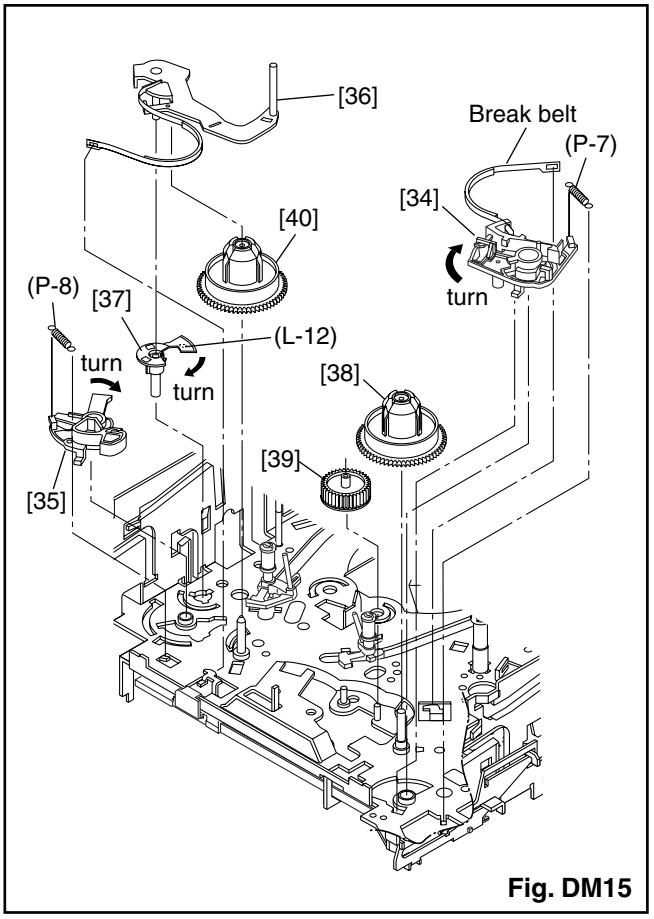


Fig. DM15

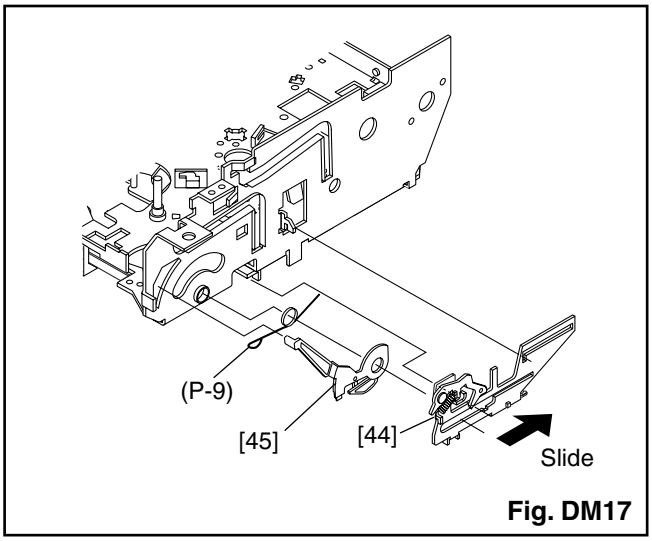


Fig. DM17

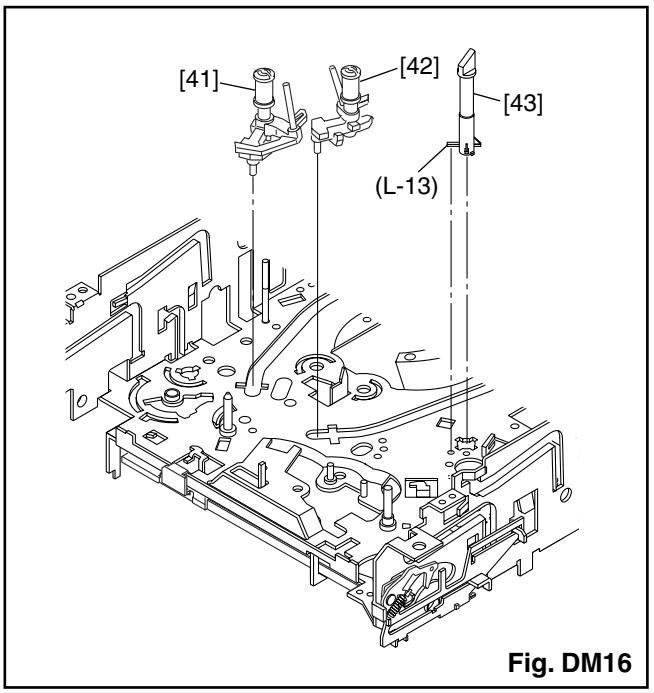


Fig. DM16

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

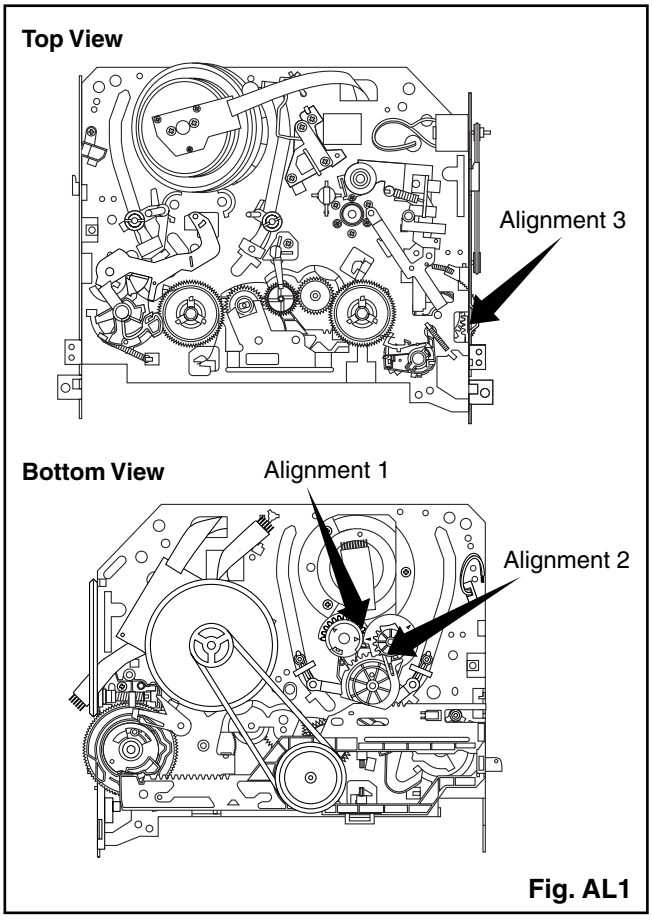


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

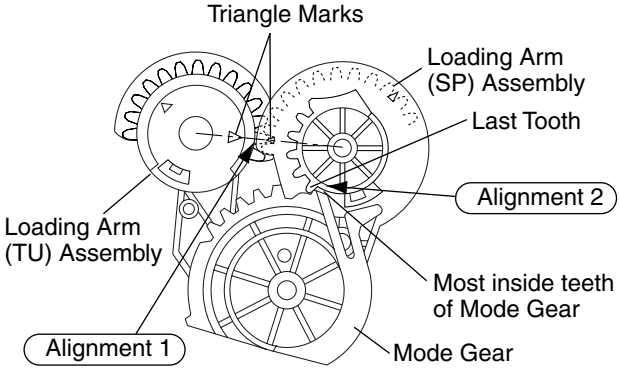


Fig. AL2

Alignment 3

Cam Gear (A), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.

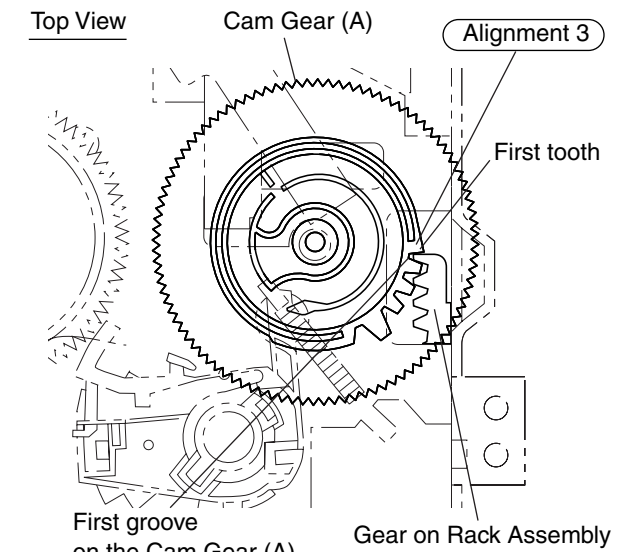
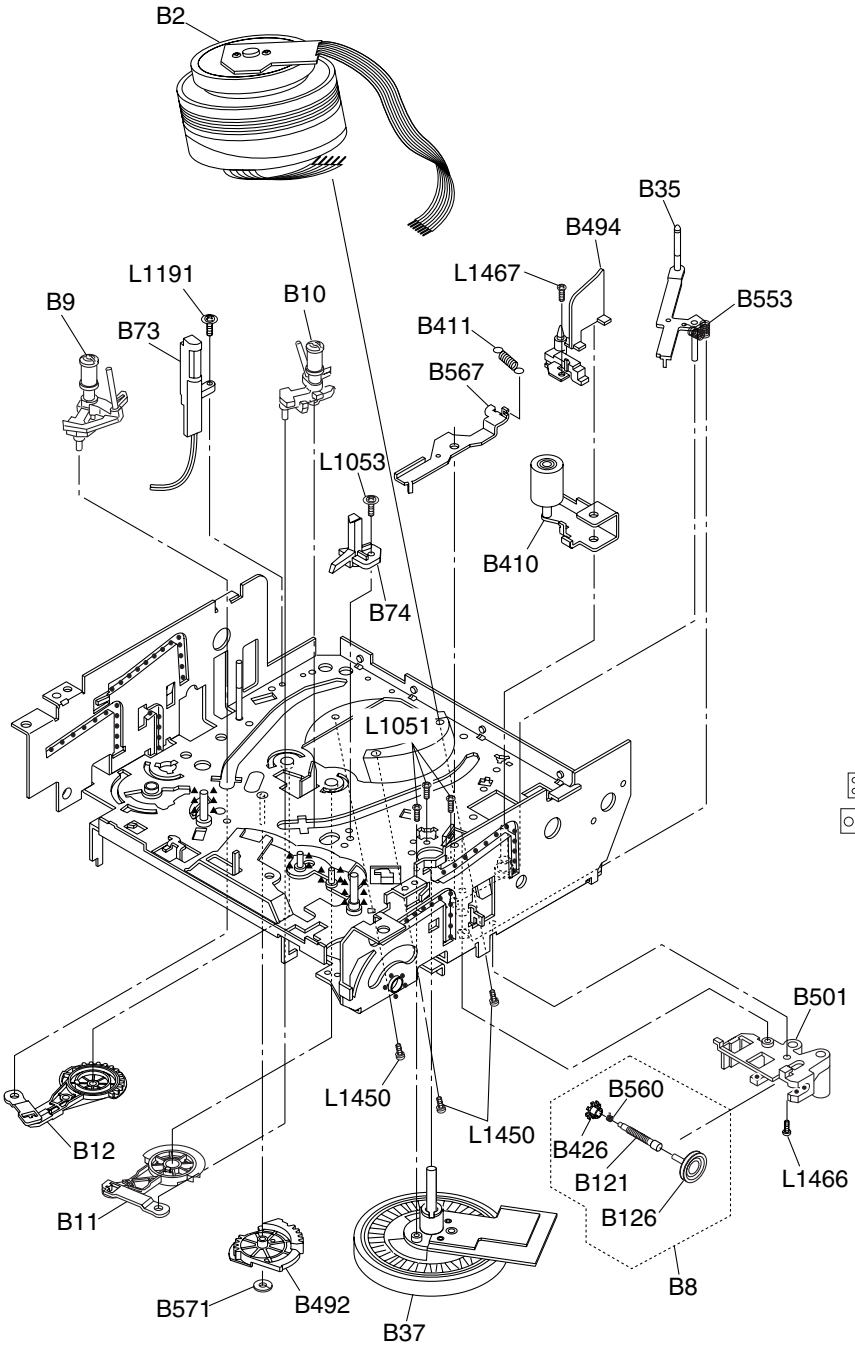


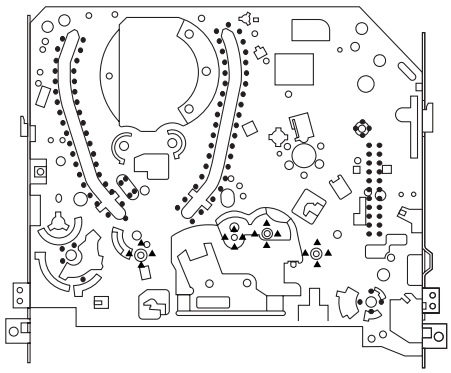
Fig. AL3

DECK EXPLODED VIEWS

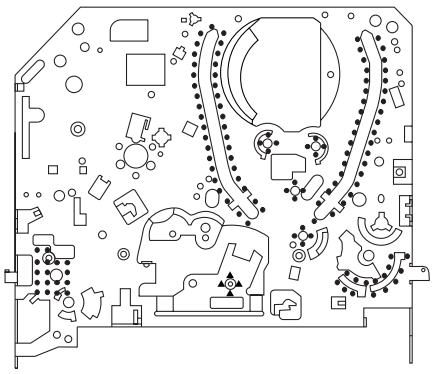
Deck Mechanism View 1

Mark	Description
•••••	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150





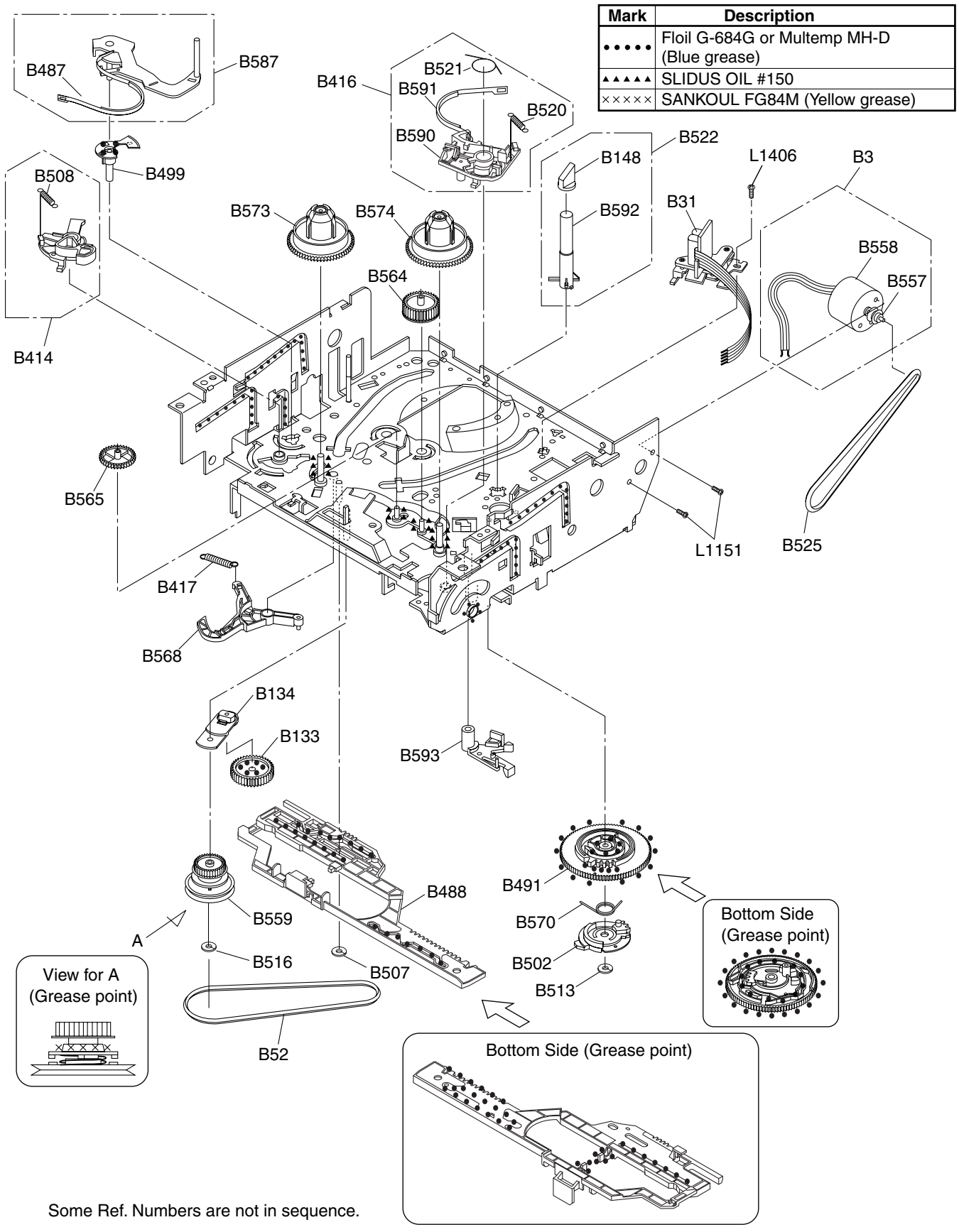
Chassis Assembly
Top View (Lubricating Point)



Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

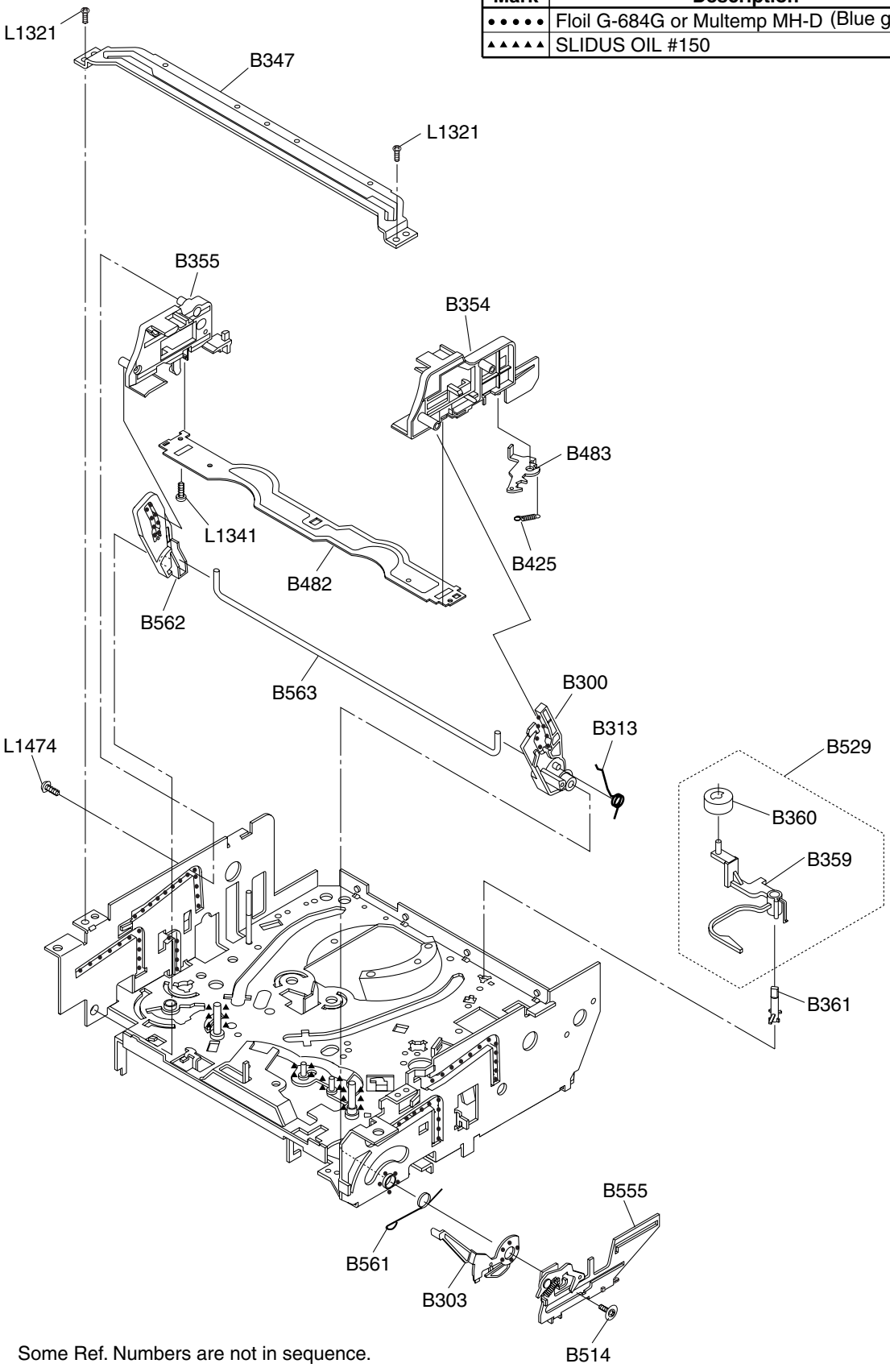
Deck Mechanism View 2



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

DECK PARTS LIST

Ref. No.	Description	Part No.
B2	CYLINDER ASSEMBLY MK12.5 NTSC 4HD	N2248CYL
B3	LOADING MOTOR ASSEMBLY MK12.5	0VSA14636
B8	PULLEY ASSEMBLY MK12	0VSA13500
B9	MOVING GUIDE S P.P MK12.5	0VSA14717
B10	MOVING GUIDE T P.P MK12.5	0VSA14639
B11	LOADING ARM(TU) ASSEMBLY MK12	0VSA13300
B12	LOADING ARM(SP) ASSEMBLY MK12	0VSA13299
B31	AC HEAD ASSEMBLY(TVCR) MK12.5	0VSA14866
B35	TAPE GUIDE ARM ASSEMBLY MK12.5	0VSA15014
B37	CAPSTAN MOTOR 288/VCZC1300	N9680CML
B52	CAP BELT MK10	0VM411138
B73	FE HEAD(MK11) MH-131SF11 or	DHVEC01Z0005
	FE HEAD(MK12) VTR-1X2ERS11-155 or	DHVEC01TE005
	FE HEAD(MK12) HVFHP0047A	DHVEC01AL007
B74	PRISM MK10	0VM202870
B121	WORM MK12	0VM414091
B126	PULLEY MK12	0VM414330B
B133	IDLER GEAR MK12	0VM305738
B134	IDLER ARM MK12	0VM305739
B148	TG CAP MK11	0VM412972
B300	C DRIVE LEVER(TU) MK12	0VM203773
B303	F DOOR OPENER MK12	0VM203751C
B313	C DRIVE SPRING MK12	0VM414145
B347	GUIDE HOLDER A MK10	0VM304920
B354	SLIDER(TU) MK12	0VM101172F
B355	SLIDER(SP) MK12	0VM101182K
B359	CLEANER LEVER MK10	0VM304413
B360	CLEANER ROLLER MK9	0VM410032C
B361	CL POST MK10	0VM411114
B410	PINCH ARM(A) ASSEMBLY(6) MK12.5 or	0VSA14935
	PINCH ARM(A) ASSEMBLY(5) MK12	0VSA13788
B411	PINCH SPRING MK12	0VM414644
B414	M BRAKE(SP) ASSEMBLY MK12.5	0VSA14994
B416	M BRAKE(TU) ASSEMBLY MK12	0VSA13283
B417	TENSION SPG(3002645) MK12.5	0VM414221G
B425	LOCK LEVER SPRING MK10	0VM411110
B426	KICK PULLEY MK10	0VM411095
B482	CASSETTE PLATE MK12	0VM203749
B483	LOCK LEVER MK12	0VM414095
B487	BAND BRAKE(SP) MK12	0VM305723
B488	MODE LEVER MK12.5	0VM101351
B491	CAM GEAR(A) MK12	0VM101174
B492	MODE GEAR MK12	0VM203769
B494	C DOOR OPENER MK12	0VM305719
B499	T LEVER HOLDER MK12	0VM305729
B501	WORM HOLDER MK12	0VM203767
B502	CAM GEAR(B) MK12	0VM305721
B507	REEL WASHER MK9 5*2.1*0.5	0VM410058
B508	S BRAKE SPRING MK10	0VM411121
B513	CAM WASHER MK12	0VM414741
B514	SCREW RACK MK10	0VM411535
B516	REEL WASHER MK9 5*2.1*0.5	0VM410058
B520	TU BRAKE SPRING MK12	0VM414285
B521	REV BRAKE SPRING MK12	0VM414222
B522	TG POST ASSEMBLY MK11	0VSA12080
B525	LDG BELT MK11	0VM412804

Ref. No.	Description	Part No.
B529	CLEANER ASSEMBLY MK10	0VSA11161
B553	REV SPRING MK11	0VM412555
B555	RACK ASSEMBLY MK12	0VSA13289
B557	MOTER PULLEY U5	0VM403205
B558	LOADING MOTOR M31E-1 R-14 7401	MMDZB12MM007
B559	CLUTCH ASSEMBLY MK12	0VSA13284
B560	KICK SPRING MK10	0VM411475A
B561	F DOOR SPRING MK10	0VM411430
B562	C DRIVE LEVER(SP) MK12	0VM203772
B563	SLIDER SHAFT MK12	0VM305762
B564	M GEAR MK12	0VM305735
B565	SENSOR GEAR MK12	0VM305736
B567	PINCH ARM(B) MK12	0VM305718
B568	BT ARM MK12	0VM305728
B570	CAM RACK SPRING(HI) MK11	0VM412923
B571	P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573	REEL(SP)(D2) MK12	0VM203755
B574	REEL(TU)(D2) MK12	0VM203756
B587	TENSION LEVER ASSEMBLY MK12	0VSA13279
B590	BRAKE ARM(TU) MK12	0VM203752E
B591	BAND BRAKE(TU) MK12	0VM305724C
B592	TG POST MK11	0VM412550
B593	CAM HOLDER ASSEMBLY MK12.5	0VSA14634
L1051	SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151	SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191	SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1321	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1341	SCREW, P-TIGHT M2X6 PAN HEAD+	GPMP2060
L1406	AC HEAD SCREW MK9	0VM410964
L1450	SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1466	SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1467	SCREW M2.6X5 WASHER HEAD+	SCM39050
L1474	SCREW, P-TIGHT M2.6X12 WASHER HEAD+	GCMP9120

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